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Patentanmeldung Nr. Patent application No. Demande de brevet n°

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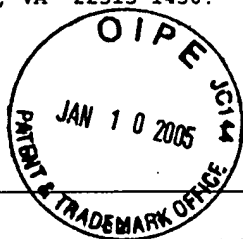
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Brian C. Remy  
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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

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Jie Chen, et al.

Serial No.: 10/733,969

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For: SPECIFIC MARKERS FOR PANCREATIC CANCER

TRANSMITTAL OF CERTIFIED COPY

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<u>Country</u>	<u>Application No.</u>	<u>Filing Date</u>
Europe	02028058.2	December 17, 2002
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Bezeichnung der Erfindung/Title of the invention/Titre de l'invention:  
(Falls die Bezeichnung der Erfindung nicht angegeben ist, siehe Beschreibung.  
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Specific markers for pancreatic cancer

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## SPECIFIC MARKERS FOR PANCREATIC CANCER

The present invention relates to markers for diagnosis of pancreatic cancer comprising at least one polypeptide identified by proteomics to be up-regulated in pancreatic cancer, to an in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of a) obtaining a biological sample; and b) detecting and/or measuring the increase of specific markers as disclosed herein. Furthermore, screening methods relating to antagonists of the specific markers disclosed herein are provided.

10

### Background

Pancreatic cancer is a common cause of death in the Western world. It is one of the most aggressive malignant tumors, with an overall 5-year survival rate of 0.4%. In many patients with pancreatic cancer, accurate preoperative diagnosis is difficult to achieve with conventional imaging analyses. Most patients with pancreatic cancer present late in the course of the disease and have either locally extensive or metastatic disease. Overall, only up to 20% are candidates for resection and have the potential for curative surgery. Among the causes for this late presentation is the lack of diagnostic methods for an earlier detection of the disease. Besides this lack of diagnostic methods, the high mortality of patients with pancreatic cancer is additionally caused by a lack of effective treatments. Therefore, the identification of new targets for early diagnosis of pancreatic tumors, and for the development of agents to treat pancreatic cancer is a challenge of paramount importance.

20

HR/27.10.2003

## Detailed Description of the Invention

The problem of identifying polypeptides suitable as markers of pancreatic cancer for early diagnosis of the disease, and the long felt need for such markers, was overcome by the present invention by applying the new technology of proteomics. It was surprisingly found by using proteomic technology that a specific set of polypeptides are differentially expressed in pancreatic tissue obtained from individuals suffering from pancreatic cancer, as compared to healthy pancreatic tissue. Said differentially expressed polypeptides are listed in appended tables 2 and 3. The polypeptides in table 3 are encoded by genes which were previously identified to be up-regulated in pancreatic cancer on the transcriptional level (Iacobuzio-Donahue et al., (2002), Am. J. Pathol. 160, 1239-1249). However, it is well known that regulation on the transcriptional level is not necessarily indicative of a similar regulation of the expression of the respective gene on the translational level. Thus, only by demonstrating that the polypeptides listed in table 3 are up-regulated in pancreatic cancer is it possible to use them for polypeptide-based diagnostic assays for the detection of pancreatic cancer.

Based on the polypeptides listed in tables 2 and 3, the present invention provides a marker for diagnosis of pancreatic cancer comprising at least one polypeptide selected from the group consisting of the polypeptides listed in tables 2 and/or 3 (Seq ID No. 1 to 24 and 26 to 49; and/or Seq ID No. 25 and 50 to 55). Thus, the term "marker" as used herein refers to one or more polypeptides that are regulated in cancer and that can be used to diagnose pancreatic cancer or a susceptibility to pancreatic cancer either alone or as combinations of multiple polypeptides that are known to be regulated in pancreatic cancer. Preferably, said polypeptides are selected from the group consisting of Seq. ID No. 2 to 10, 12 to 15, 17, 19, 20, 23, 24, 27, 28, 31 to 40, 42 to 45, 47 and 48; and/or Seq ID No. 25 and 50 to 54. More preferably, said polypeptides are selected from the group consisting of Seq ID No. 3, 4, 6, 9, 14, 15, 27, 31 to 35, 37, 39, 40; and/or Seq ID No. 50 to 52. Even more preferably, said polypeptides are selected from the group consisting of Seq ID No. 4, 6, 9, 14, 15, 31, 33 to 35 and/or Seq ID No. 51 and 52. Most preferably, said polypeptides are selected from the group consisting of Seq ID No. 4, 6, 14, 15 and 31; and/or Seq ID No. 52.



The term "polypeptide" as used herein, refers to a polymer of amino acids, and not to a specific length. Thus, peptides, oligopeptides and proteins are included within the definition of polypeptide.

5

Preferably, the marker of this invention is a marker comprising at least one polypeptide selected from the group consisting of the polypeptides listed in table 2.

Furthermore, a polypeptide selected from the group consisting of the polypeptides  
10 listed in tables 2 and/or 3, is used as a marker or as part of a marker for diagnosis of  
pancreatic cancer and/or the susceptibility to pancreatic cancer. Preferably, said  
polypeptides are selected from the group consisting of Seq. ID No. 2 to 10, 12 to 15, 17, 19,  
20, 23, 24, 27, 28, 31 to 40, 42 to 45, 47 and 48 from table 2 and/or Seq ID No. 25 and 50 to  
54 from table 3. These polypeptides are induced at least two fold, as can be seen in tables 2  
15 and 3. More preferably, said polypeptides are selected from the group consisting of Seq ID  
No. 3, 4, 6, 9, 14, 15, 27, 31 to 35, 37, 39, 40 from table 2 and/or Seq ID No. 50 to 52 from  
table 3. These polypeptides are induced at least three fold, as can be seen in tables 2 and 3.  
Even more preferably, said polypeptides are selected from the group consisting of Seq ID  
No. 4, 6, 9, 14, 15, 31, 33 to 35 from table 2 and/or Seq ID No. 51 and 52 from table 3.  
20 These polypeptides are induced at least 4 fold, as can be seen in tables 2 and 3. Most  
preferably, said polypeptides are selected from the group consisting of Seq ID No. 4, 6, 14,  
15 and 31 from table 2 and/or Seq ID No. 52 from table 3, which are the polypeptides that  
are induced five fold, as shown in tables 2 and 3.

25 The present invention pertains to a marker for diagnosis of pancreatic cancer  
comprising at least one polypeptide selected from the group consisting of the polypeptides  
listed in table 6. Preferably, said at least one polypeptide additionally does not include Seq  
ID No.s 25 and 50 to 55.

30 In a preferred embodiment, the marker hereinbefore described additionally  
comprises at least one of the polypeptides listed in table 5.

Several groups of polypeptides were identified as markers for pancreatic cancers:

### Enzymes

One of the enzymes that caught our attention was Glutamine  $\gamma$ -glutamyltransferase/tissue transglutaminase (TGLC, Seq ID No. 54). It is a member of the transglutaminase family that catalyzes  $\text{Ca}^{2+}$  dependent reactions resulting in the post translational modification (cross-linking and conjugation with polyamines) of proteins at the level of glutamine and lysine residues (Greenberg, C. S., Birckbichler, P. J., and Rice, R. H. Transglutaminases: multifunctional cross-linking enzymes that stabilize tissues. *FASEB J.*, 5: 3071-3077, 1991). Many different roles for this protein have been described, among them apoptosis, adhesion, and differentiation (Amendola, A., Fesus, L., Piacentini, M., and Szondy, Z. "Tissue" transglutaminase in AIDS. *J.Immunol.Methods*, 265: 145-159, 2002). There is some controversy on the role of TGLC in apoptosis. While several pieces of evidence suggest that TGLC is a pro-apoptotic protein (Melino, G., et al., *Mol.Cell Biol.*, 14: 6584-6596, 1994), Jason et al. found that TGLC acts in anti-apoptotic fashion (Boehm, J. E., et al. *J.Biol.Chem.*, 277: 20127-20130, 2002). Many substrates of TGLC are major extra-cellular matrix (ECM) components such as fibronectin, osteonectin, and collagen, which makes TGLC an important enzyme in ECM development (Raghunath, M., et al., *J.Clin.Invest*, 98: 1174-1184, 1996., Nemes, Z., Jr., et al. *J.Biol.Chem.*, 272: 20577-20583, 1997). Abnormal ECM development is involved in many pathological conditions such as fibrosis and may play a role in the proliferation of fibrous tissue observed in PC. Haroon et al. described that TGLC ECM-promoting abilities are an important part of the host response mechanism against tumor growth (Haroon, Z. A., et al., *Lab Invest*, 79: 1679-1686, 1999). Interestingly, loss of TGLC can be a biomarker for prostate adenocarcinoma (Birckbichler, P. J., et al., *Cancer*, 89: 412-423, 2000), which raises the question whether the measured TGLC is produced by neoplastic ductal cells and/or stromal cells. Measurements of mRNA levels in PC, normal tissue and PC cell lines indicate that TGLC is over expressed in both cell types (Iacobuzio-Donahue, C. A., et al., *Am.J.Pathol.*, 160: 1239-1249, 2002), which would distinguish PC from prostate adenocarcinoma.. Therefore, one preferred embodiment of the present invention is a marker comprising Seq ID No. 54.

### Cytoskeletal proteins

Several cytoskeletal proteins were detected at higher levels in PC than in surrounding tissue. One of these is gelsolin (Seq ID No. 3), a  $\text{Ca}^{2+}$  and PIP2 (polyphosphoinositide 4,5-

bisphosphate) regulated severing and capping protein, which is a multifunctional actin regulatory protein and has roles in actin remodeling, motility, signaling, apoptosis and cancer (Maruta, H. G proteins cytoskeleton and cancer. Austin, Tex.: R.G. Landes, 1998). In several cancer studies, gelsolin expression has been described as down-regulated during  
5 carcinogenesis (breast, colon, stomach, bladder, prostate, and lung) (Asch, H. L., et al., Cancer Res., 56: 4841-4845, 1996; Dosaka-Akita, H., et al., Cancer Res., 58: 322-327, 1998, Prasad, S. C., et al. Electrophoresis, 18: 629-637, 1997). Another example for an up-regulated cytoskeletal protein is fascin (Seq ID No. 58), an actin-bundling protein that has a role in cell matrix adhesion, cell interaction and migration. Fascin over expression has  
10 been reported in several cancers, such as breast, colon, and ovarian carcinoma (29). The present invention also features fascin 2 as a polypeptide up-regulated in pancreatic cancer (Seq ID No. 56). Thus, a preferred embodiment of the present invention is a marker comprising Seq ID. No. 3. In another preferred embodiment, the marker comprises Seq. ID No. 58. In another preferred embodiment, the marker comprises Seq. ID No. 56.

15 In our study, cytokeratin 7 (Seq. ID No. 52) and cytokeratin 19 (Seq ID No. 33) showed strong expression in PC. Both have also been described in other cancers and have been linked with metastasis formation (Moll, R., Int.J.Biol.Markers, 9: 63-69, 1994.). High protein levels of actinin-4 (Seq ID No. 5) were detected in PC. This protein was linked by others with cell motility and cancer invasion (Honda, K., Yamada, T., Endo, R., Ino, Y.,  
20 Gotoh, M., Tsuda, H., Yamada, Y., Chiba, H., and Hirohashi, S. J.Cell Biol., 140: 1383-1393, 1998.). Taken together, the apparent strong expression of cytoskeletal proteins is likely to be an important factor in the strong invasiveness and metastasis-forming potential of PC. Thus, a preferred embodiment of the present invention is a marker comprising Seq ID. No. 52. In another preferred embodiment, the marker comprises Seq.  
25 ID No. 33. In another preferred embodiment, the marker comprises Seq. ID No. 5.

### Metastasis

Cancer of exocrine pancreas is characterized by extensive local invasion, early lymphatic and hematogenous metastasis. Metastasis in PC has been found in the skeleton, eye, bladder, etc. The extent of angiogenesis depends on the balance between pro-  
30 angiogenic or anti-angiogenic factors released from cancer and host cell. Currently, intratumoral microvessel density (IMD) measured by immunocytochemistry appears to be the most reliable parameter for assessing angiogenic activity. Patients with high IMD have decreased survival rates in a variety of cancers (Fujioka, S., et al., Cancer, 92: 1788-1797, 2001). Thymidine phosphorylase (TYPH or TP, Seq ID No. 31) which is identical to  
35 platelet-derived endothelial cell growth factor, is strongly expressed in PC and stimulates

the chemotaxis of endothelial cells through the 2-deoxy-D-ribose, degradation products of thymidine by TP, thus indirectly inducing angiogenesis (Haraguchi, M., et al. Nature, 368: 198, 1994.). Shuichi Fujioka et al. found that IMD and TP status were independent predictive indicators for overall as well as relapse-free survival in PC (Fujioka, S., et al., Cancer, 92: 1788-1797, 2001). An additional protein detected at higher levels in PC than in surrounding tissue likely involved in metastasis formation is osteoblast specific factor 2 (Seq ID No.53), a putative bone adhesion protein. Breast carcinoma commonly metastasizes to bone (Guisse, T. A. Cancer, 88: 2892-2898, 2000). Although the role of this protein in PC is not clearly established, our findings suggest a similar role for osteoblast specific factor 2 in PC. Thus, a preferred embodiment of the present invention is a marker comprising Seq ID. No. 31. In another preferred embodiment, the marker comprises Seq. ID No. 53.

#### Small GTP-binding proteins

Four small GTP-binding proteins and interacting proteins were more strongly expressed in PC than in normal pancreas tissue. These include RAN (Seq. ID No. 27), GBLP (guanine nucleotide binding protein  $\beta$  subunit-like protein RACK1, Seq. ID No. 47), GDIR (Rho GDP dissociation inhibitor 1, Seq. ID No. 55), and IQG1 or IQGAP1 (Ras gtpase activating like protein, Seq ID No. 25). Small GTP-binding proteins constitute a superfamily, which is structurally classified into at least five families: the Ras, Rho, Rab, Sar1/Arf, and Ran families and are involved in the regulation of gene expression, cytoskeletal reorganization, and nucleocytoplasmic transport (Takai, Y., et al. Physiol Rev., 81: 153-208, 2001). RAN is known to enhance androgen receptor-mediated transactivation and was shown to be overexpressed in prostate cancer (Sampson, E. R., et al., J.Biol.Regul.Homeost.Agents, 15: 123-129, 2001). Increased expression of RAN in 81% of prostate tumor cases, may contribute to over proliferation of prostate tumor cells (Li, P., et al., Am J Pathol., 161: 1467-1474,2002). GBLP is an anchoring protein for activated protein kinase C $\beta$  and a variety of other proteins. Protein kinase C plays an important role in angiogenesis and cancer growth. Berns et al. found GBLP up-regulated in during angiogenesis *in vitro* and also associated with nonendothelial cells in angiogenically active tissue (Berns, H., et al., FASEB J., 14: 2549-2558, 2000). Further more, mRNA expression of GBLP is detected in epithelial cells of human colon carcinoma and proliferating epithelial cell of normal colon tissue. Therefore, there is a likely link between high GBLP expression and tumor growth. GDIR (Rho GDP dissociation inhibitor) had been found up-regulated in a chemoresistant fibrosarcoma cell line by 2D-PAGE (Sinha, P., et al., Electrophoresis, 20: 2961-2969, 1999) and may block apoptotic signal pathway mediated

by Ras and c-jun kinase, resulting in the increase resistance against environmental stress. IQG1 (Ras GTPase-activating-like protein) is a widely expressed 190-kDa Cdc42-, Rac1-, and calmodulin-binding protein that interacts with F-actin in vivo and that can cross-link F-actin microfilaments in vitro. IQG1 negatively regulates the Ecc-based (E-cadherin/catenin complex) cell-cell adhesion by dissociating alpha-catenin. Up-regulation of IQGAP1 is correlated with the malignant phenotype in gastric cancer (Sugimoto, N., et al., *J. Hum. Genet.*, 46: 21-25, 2001). By immunohistochemical analysis, IQGAP1 was found overexpressed in colorectal carcinoma and associated with carcinoma invasion (Nabeshima, K., et al., *Cancer Lett.*, 176: 101-109, 2002). Since cancer invasiveness is associated with the localized disruption of cell-cell adhesion, both our results and Iacobuzio-Donahue et al.'s data suggest that IQGAP1 may be involved in the disruption of local adhesion and in PC invasion to surrounding tissue. Thus, a preferred embodiment of the present invention is a marker comprising Seq ID No. 27. In another preferred embodiment, the marker comprises Seq. ID No. 47. In another preferred embodiment, the marker comprises Seq. ID No. 55. In another preferred embodiment, the marker comprises Seq. ID No. 25.

#### S100 protein family

Another protein with high-level expression in PC is S109 (S100A9, MRP-14, calgranulin B, Seq ID No. 49), a member of the S100 protein family of highly homologous low molecular weight calcium binding proteins. Calgranulins are characterized by cell type-specific expression in cells of epithelial, myeloid and endothelial origin and accumulation at sites of acute and chronic inflammation (e.g. rheumatoid arthritis, cystic fibrosis, psoriasis, allergic dermatitis, inflammatory bowel diseases) (Donato, R. *Int.J.Biochem.Cell Biol.*, 33: 637-668, 2001). S100A8 and S100A9 can form a noncovalent heterodimer protein complex called calprotectin. Current reports support that both of S100A9 and S100 A8 have wide range of possible intracellular as well as extracellular functions (Schafer, B. W. and Heizmann, C. W. *Trends Biochem.Sci.*, 21: 134-140, 1996). S100A8 and S100A9 are negatively regulated by glucocorticoids in a c-Fos-dependent manner and over expressed throughout skin carcinogenesis (Gebhardt, C., et al., *Oncogene*, 21: 4266-4276, 2002). These proteins are also more strongly expressed in colorectal carcinoma than in matched normal colon mucosa, as shown by proteomics analysis (Stulik, J., et al., *Electrophoresis*, 20: 1047-1054, 1999). S100A9 has been detected in cultured human adenocarcinoma (AC) cells derived from various organs, and is associated with tumor differentiation in pulmonary adenocarcinoma (Arai, K., et al., *Oncol.Rep.*, 8: 591-596, 2001). Iacobuzio-Donahue et al's work indicates that over

expression of S100A4 in PC is associated with poor differentiation and DNA hypomethylation (Rosty, C., et al., *Am.J.Pathol.*, 160: 45-50, 2002). Thus, a preferred embodiment of the present invention is a marker comprising Seq ID. No. 49.

### Annexin

5 We found that annexin 1 (Seq ID No. 51) and annexin 2 (Seq ID No. 19) have high level of expression in PC. Both are members of a family of  $\text{Ca}^{2+}$ -dependent membrane-binding proteins. Described functions include, among others, an important role in malignant transformation (Masaki, T., et al., *Hepatology*, 24: 72-81, 1996), the control of epithelial cell line proliferation (Solito, E., et al., *Cell Growth Differ.*, 9: 327-336, 1998),  
10 and mediation of apoptosis (Canaider, S., et al., *Life Sci.*, 66: L265-L270, 2000). Evidence in support of causative roles for any annexins in the development of cancer is still mainly circumstantial. In MCF-7 breast carcinoma cells, overexpression of annexin1 led to abrogation of  $\text{Ca}^{2+}$  release after activation of purinergic or bradykinin receptors (Frey, B. M., et al., *FASEB J.*, 13: 2235-2245, 1999), while over expression of annexin1 in rat 2  
15 fibroblasts leads to direct inhibition of cytosolic PLA2, which in turn depresses the serum response element of c-fos (Oh, J., et al., *FEBS Lett.*, 477: 244-248, 2000). Collectively, these studies imply a growth-suppressive role for annexin1. These results are not supported by the finding that annexin 1 is strongly up-regulated in a prostate cancer cell line (Vaarala, M. H., *Lab Invest*, 80: 1259-1268, 2000), esophageal cancer (Emmert-Buck, M. R., et al.,  
20 *Mol.Carcinog.*, 27: 158-165, 2000), a stomach cancer cell line (Sinha, P., et al., *J.Biochem.Biophys.Methods*, 37: 105-116, 1998), mammary adenocarcinoma (Pencil, S. D. and Toth, M. *Clin.Exp.Metastasis*, 16: 113-121, 1998), and hepatocarcinoma (de Coupade, C., et al., *Hepatology*, 31: 371-380, 2000). In hepatocarcinoma, study also showed that the proliferative rate of both normal and malignant hepatocytes was attenuated by antisense to  
25 annexin 1. These and our data suggest that cell growth is associated with elevated rather than reduced levels of annexin 1, which is also supported by the studies of Iacobuzio-Donahue et al. (*Am. J. Pathol.*, 160: 1239-1249, 2002). Thus, a preferred embodiment of the present invention is a marker comprising Seq ID No. 51. In another preferred embodiment, the marker comprises Seq. ID No. 19.

30

Some additional proteins highly expressed in PC may have either clear roles in PC or an indirect link with PC, e.g. BGH3 (TGF- $\beta$ 1-induced protein, Seq ID No. 6) which is a secretory protein and acts as a marker for biologically active TGF-  $\beta$  1 (Langham, R. G., et

al., Transplantation, 72: 1826-1829, 2001). Thus, a preferred embodiment of the present invention is a marker comprising Seq ID No. 6.

With the identification of polypeptides regulated in pancreatic cancer, the present invention provides an in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of obtaining a biological sample; and detecting and/or measuring the increase of a marker described hereinbefore. The term "detection" as used herein refers to the qualitative determination of the absence or presence of polypeptides. The term "measured" as used herein refers to the quantitative determination of the differences in expression of polypeptides in biological samples from patients with pancreatic cancer and biological samples from healthy individuals. Methods for detection and/or measurement of polypeptides in biological samples are well known in the art and include, but are not limited to, Western-blotting, ELISAs or RIAs . Antibodies recognizing the polypeptides listed in table 2, 3, 5 and/or 6 can either be generated for the purpose of detecting said polypeptides, eg. by immunizing rabbits with purified proteins, or known antibodies recognizing said polypeptides can be used. For example, an antibody capable of binding to the denatured proteins, such as a polyclonal antibody, can be used to detect the peptides of this invention in a Western Blot. An example for a method to measure a marker is an ELISA. This type of protein quantitation is based on an antibody capable of capturing a specific antigen, and a second antibody capable of detecting the captured antigen. A further method for the detection of a diagnostic marker for pancreatic cancer is by analysing biopsy specimens for the presence or absence of the markers of this invention. Methods for the detection of these markers are well known in the art and include, but are not limited to, immunohistochemistry or immunofluorescent detection of the presence or absence of the polypeptides of the marker of this invention. Methods for preparation and use of antibodies, and the assays mentioned hereinbefore are described in Harlow, E. and Lane, D. Antibodies: A Laboratory Manual, (1988), Cold Spring Harbor Laboratory Press.

The accuracy of the diagnosis of pancreatic cancer can be increased by analysing combinations of multiple polypeptides listed in tables table 2, 3, 5 and/or 6. Thus, the in vitro method herein before described, comprises a marker which comprises at least two, preferably at least three, more preferably at least four, even more preferably at least five, and most preferably at least six of the polypeptides listed in table 2,3, 5 and/or 6.

For diagnosis of pancreatic cancer, suitable biological samples need to be analysed for the presence or absence of a marker. Said biological samples can be serum, plasma, pancreatic juice or cells of pancreatic tissue. Cells from pancreatic tissue can be obtained  
5 by ERCP, secretin stimulation, fine-needle aspiration, cytologic brushings and large-bore needle biopsy.

It is also possible to diagnose pancreatic cancer by detecting and/or measuring nucleic acid molecules coding for the marker hereinbefore described. Preferably, said  
10 nucleic acid molecule is RNA or DNA. In another embodiment, said DNA is a cDNA.

In one embodiment of the present invention, the in vitro method herein before described comprises comparing the expression levels of at least two of the nucleic acids encoding said polypeptides in an individual suspected to suffer from pancreatic cancer  
15 and/or to be susceptible to pancreatic cancer, to the expression levels of the same nucleic acids in a healthy individual.

In another embodiment of the present invention the in vitro method herein before described comprises comparing the expression level of said marker in an individual  
20 suspected to suffer from pancreatic cancer and/or to be susceptible to pancreatic cancer to the expression levels of the same marker in a healthy individual. In a more preferred embodiment of the in vitro method, an increase or decrease of the expression levels of said marker is indicative of pancreatic cancer or the susceptibility to pancreatic cancer.

25 The present invention also provides a screening method for identifying and/or obtaining a compound which interacts with a polypeptide listed in table 2 and/or 3 whose expression is upregulated in pancreatic cancer, comprising the steps of contacting said polypeptide with a compound or a plurality of compounds under conditions which allow interaction of said compound with said polypeptide; and detecting the interaction between  
30 said compound or plurality of compounds with said polypeptide.



The "interaction" in the screening methods as disclosed herein may be measured by conventional methods. The type of conventional method for testing the interaction of a compound with a polypeptide that is soluble, as opposed to membrane associated, can be an in vitro method using either purified recombinant polypeptide, or native polypeptide purified from cells that endogenously express the polypeptide. As a non-limiting example, a polypeptide of the invention can be bound to beads or immobilized on plastic or other surfaces, and interaction of a compound with the polypeptide can be measured by either using a labelled compound and measuring the label bound to the polypeptide or by displacement of a labeled known ligand from said polypeptide.

For polypeptides that are associated with the cell membrane on the cell surface, or which are expressed as transmembrane or integral membrane polypeptides, the interaction of a compound with said polypeptides can be detected with different methods which include, but are not limited to, methods using cells that either normally express the polypeptide or in which the polypeptide is overexpressed, eg. by detecting displacement of a known ligand which is labeled by the compound to be screened. Alternatively, membrane preparations may be used to test for interaction of a compound with such a polypeptide

20

Interaction assays to be employed in the method disclosed herein may comprise FRET-assays (fluorescence resonance energy transfer; as described, inter alia, in Ng, Science 283 (1999), 2085-2089 or Ubarretxena-Belandia, Biochem. 38 (1999), 7398-7405), TR-FRETs and biochemical assays as disclosed herein. Furthermore, commercial assays like "Amplified Luminescent Proximity Homogenous Assay<sup>TM</sup>" (BioSignal Packard) may be employed. Further methods are well known in the art and, inter alia, described in Fernandez, Curr. Opin. Chem. Biol. 2 (1998), 547-603.

The "test for interaction" may also be carried out by specific immunological and/or biochemical assays which are well known in the art and which comprise, e.g., homogenous and heterogenous assays as described herein below. Said interaction assays employing read-out systems are well known in the art and comprise, inter alia, two-hybrid screenings

30

(as, described, inter alia, in EP-0 963 376, WO 98/25947, WO 00/02911; and as exemplified in the appended examples), GST-pull-down columns, co-precipitation assays from cell extracts as described, inter alia, in Kasus-Jacobi, Oncogene 19 (2000), 2052-2059, "interaction-trap" systems (as described, inter alia, in US 6,004,746) expression cloning  
5 (e.g. lamda gt11), phage display (as described, inter alia, in US 5,541,109), in vitro binding assays and the like. Further interaction assay methods and corresponding read out systems are, inter alia, described in US 5,525,490, WO 99/51741, WO 00/17221, WO 00/14271 or WO 00/05410. Vidal and Legrain (1999) in Nucleic Acids Research 27, 919-929 describe, review and summarize further interaction assays known in the art which may be employed  
10 in accordance with the present invention.

Homogeneous (interaction) assays comprise assays wherein the binding partners remain in solution and comprise assays, like agglutination assays. Heterogeneous assays comprise assays like, inter alia, immuno assays, for example, Enzyme Linked  
15 Immunosorbent Assays (ELISA), Radioactive Immunoassays (RIA), Immuno Radiometric Assays (IRMA), Flow Injection Analysis (FIA), Flow Activated Cell Sorting (FACS), Chemiluminescent Immuno Assays (CLIA) or Electrogenated Chemiluminescent (ECL) reporting.

20 The present invention further provides a screening method for identifying and/or obtaining a compound which is an inhibitor or an antagonist of a polypeptide listed in table 2 and/or 3 whose expression is upregulated in pancreatic cancer, comprising the steps of a) contacting said polypeptide with a compound identified and/or obtained by the screening method described above under conditions which allow interaction of said  
25 compound with said polypeptide; b) determining the activity of said polypeptide; c) determining the activity of said polypeptide expressed in the host as defined in (a), which has not been contacted with said compound; and d) quantitatively relating the activity as determined in (b) and (c), wherein a decreased activity determined in (b) in comparison to (c) is indicative for an inhibitor or antagonist. The terms inhibitors and antagonists as  
30 used herein are used interchangeably. This screening assay can be performed either as an in vitro assay, or as a host-based assay. The host to be employed in the screening methods of the present invention and comprising and/or expressing a polypeptide listed in table 2, 3, 5 and/or 6 may comprise prokaryotic as well as eukaryotic cells. Said cells may comprise bacterial cells, yeast cells, as well as cultured (tissue) cell lines, inter alia, derived from  
35 mammals. Furthermore animals may also be employed as hosts, for example an non-

human transgenic animal. Accordingly, said host (cell) may be transfected or transformed with the vector comprising a nucleic acid molecule coding for a polypeptide which is differentially regulated in pancreatic cancer as disclosed herein. Said host cell or host may therefore be genetically modified with a nucleic acid molecule encoding such a polypeptide  
5 or with a vector comprising such a nucleic acid molecule. The term "genetically modified" means that the host cell or host comprises in addition to its natural genome a nucleic acid molecule or vector coding for a polypeptide listed in table 2, 3, 5 and/or 6 or at least a fragment thereof. Said additional genetic material may be introduced into the host (cell) or into one of its predecessors/parents. The nucleic acid molecule or vector may be present in  
10 the genetically modified host cell or host either as an independent molecule outside the genome, preferably as a molecule which is capable of replication, or it may be stably integrated into the genome of the host cell or host.

As mentioned herein above, the host cell of the present invention may be any  
15 prokaryotic or eukaryotic cell. Suitable prokaryotic cells are those generally used for cloning like *E. coli* or *Bacillus subtilis*. Yet, these prokaryotic host cells are also envisaged in the screening methods disclosed herein. Furthermore, eukaryotic cells comprise, for example, fungal or animal cells. Examples for suitable fungal cells are yeast cells, preferably those of the genus *Saccharomyces* and most preferably those of the species *Saccharomyces*  
20 *cerevisiae*. Suitable animal cells are, for instance, insect cells, vertebrate cells, preferably mammalian cells, such as e.g. CHO, HeLa, NIH3T3 or MOLT-4. Further suitable cell lines known in the art are obtainable from cell line depositories, like the American Type Culture Collection (ATCC).

25 The hosts may also be selected from non-human mammals, most preferably mice, rats, sheep, calves, dogs, monkeys or apes. As described herein above, said animals/mammals also comprise non-human transgenic animals, which preferably express at least one polypeptide differentially regulated in pancreatic cancer as disclosed herein. Preferably, said polypeptide is a polypeptide which is up-regulated in tissue derived from  
30 patients with pancreatic cancer. Yet it is also envisaged that non-human transgenic animals be produced which do not express marker genes as disclosed herein or who express limited amounts of said marker gene products. Said animals are preferably related to polypeptides which are down-regulated in pancreatic cancer. Transgenic non-human animals comprising and/or expressing the up-regulated polypeptides of the present  
35 invention or alternatively, which comprise silenced or less efficient versions of down-

regulated polypeptides are useful models for studying the development of pancreatic cancer and provide for useful models for testing drugs and therapeutics for pancreatic cancer treatment and/or prevention.

- 5        A compound which interacts with a polypeptide listed in table 2, 3, 5 and/or 6 and which inhibits or antagonizes said polypeptide is identified by determining the activity of said polypeptide in the presence of said compound.

10        The term "activity" as used herein relates to the functional property or properties of a specific polypeptide. For the enzymes listed in table 2, 3, 5 and/or 6, the term "activity" relates to the enzymatic activity of a specific polypeptide. Activity assays for the enzymes listed in table 2, 3, 5 and/or 6 are well known.

15        For adhesion molecules listed in table 2, 3, 5 and/or 6, the term "activity" relates to the adhesive properties of a polypeptide and may be determined using assays such as, but not limited to, adhesion assays, cell spreading assays, or in vitro interaction of the adhesion molecule with a known ligand. Such assays are well known in the art.

20        For cytoskeletal proteins, the term "activity" relates to the regulation of the cytoskeleton by such polypeptides, or to their incorporation into the cytoskeleton. As a non-limiting example, the ability of Gelsolin to regulate actin polymerization, or of Filamin A to promote orthogonal branching of actin filaments, may be determined using in vitro actin polymerization assays. Activity in relation to the regulation of cytoskeletal structures may further be determined by, as non-limiting examples, cell spreading assays, 25 cell migration assays, cell proliferation assays or immunofluorescence assays, or by staining actin filaments with fluorescently labeled phalloidin. All of these assays are well known to the person skilled in the art.

For ion channels (Chloride intracellular channel protein) the term "activity" relates to ion flux (Chloride lux) across the membrane. Methods to determine ion flux across membranes are well known to the person skilled in the art.

- 5 For transcription factors, eg. KIAA 1034, the term "activity" relates to their ability to regulate gene transcription. The transcriptional activity of a polypeptide can be determined using commonly used assays, such as a reporter gene assay.

- 10 For growth factors and hormones or their receptors, the term "activity" relates to their ability to bind to their receptors or ligands, respectively, and to induce receptor activation and subsequent signaling cascades, and/or it relates to the factor's or receptor's ability to mediate the cellular function or functions eventually caused by growth factor or hormone mediated receptor activation. Growth factor or hormone binding to receptors can be determined by commonly known ligand binding assays. Receptor activation can be  
15 determined by testing for receptor auto-phosphorylation, or by assaying for modification or recruitment of downstream signaling mediators to the receptors (by immunoprecipitation and Western Blotting of signaling complexes). Cellular functions regulated by growth factors or hormones and their receptors can be cell proliferation (eg determined by using thymidine incorporation or cell counts), cell migration assays (eg  
20 determined by using modified Boyden chambers), cell survival or apoptosis assays (eg determined by using DAPI staining), angiogenesis assays (eg in vitro assays to measure endothelial tube formation that are commercially available). In addition to these assays, other assays may be used as well to determine these and other cellular functions.

- 25 Inhibitors or antagonists of a polypeptide listed in tables 2 and/or 3 are identified by the screening method described above when there is a decreased activity determined in the presence of the compound in comparison to the absence of the compound in the screening method, which is indicative for an inhibitor or antagonist.

- 30 Further to the screening methods disclosed above, this invention provides a screening method for identifying and/or obtaining a compound which is an inhibitor of the expression of a polypeptide listed in tables 2 and/or 3 whose expression is upregulated

in pancreatic cancer, comprising the steps of a) contacting a host which expresses said polypeptide with a compound; b) determining the expression level and/or activity of said polypeptide; c) determining the expression level and/or activity of said polypeptide in the host as defined in (a), which has not been contacted with said compound; and d)  
5 quantitatively relating the expression level of said polypeptide as determined in (b) and (c), wherein a decreased expression level determined in (b) in comparison to (c) is indicative for an inhibitor of the expression of said polypeptide.

An inhibitor of the expression of a polypeptide listed in table 2, 3, 5 and/or 6 is  
10 identified by the screening method described hereinbefore when a decreased expression of the protein is determined in the presence of the compound in comparison to the absence of the compound in the screening method, which is indicative for an inhibitor of expression of a polypeptide.

15 The term "express" as used herein relates to expression levels of a polypeptide listed table 2, 3, 5 and/or 6 which is up-regulated in pancreatic cancer, in cells, preferably in a pancreatic adenocarcinoma cell line, which are elevated as compared to the expression levels of the same polypeptide in healthy pancreatic cells. Preferably, expression levels are at least 2 fold, more preferably at least 3 fold, even more preferably at least 4 fold, most  
20 preferably at least 5 fold higher than in healthy pancreatic cells.

Furthermore, the present invention provides a compound identified and/or obtained by any of the screening methods hereinbefore described. Said compound is further comprised in a pharmaceutical composition. A method for the preparation of said  
25 pharmaceutical composition comprising formulating said compound in a pharmaceutically acceptable carrier or diluent is also claimed. Any conventional carrier material can be utilized. The carrier material can be an organic or inorganic one suitable for eteral, percutaneous or parenteral administration. Suitable carriers include water, gelatin, gum arabic, lactose, starch, magnesium stearate, talc, vegetable oils, polyalkylene-  
30 glycols, petroleum jelly and the like. Furthermore, the pharmaceutical preparations may contain other pharmaceutically active agents. Additional additives such as flavoring agents, stabilizers, emulsifying agents, buffers and the like may be added in accordance with accepted practices of pharmaceutical compounding.

35 Said compound may be used for the preparation of a medicament for the treatment or prevention of pancreatic cancer. In addition, said compound may also be

used for the preparation of a diagnostic composition for diagnosing pancreatic cancer or a predisposition for pancreatic cancer. Preferably, said compound comprises an antibody, an antibody-derivative, an antibody fragment, a peptide or an antisense construct.

5           Within the scope of the present invention, antibodies against the proteins listed in tables 2 and/or 3, or antigen-binding fragments thereof, may be used in an in vitro method for the diagnosis of pancreatic cancer.

10           In order to efficiently perform diagnostic screenings, the present invention provides a kit for the diagnosis of pancreatic cancer comprising one or more of the antibodies, or antigen-binding fragments thereof, described above. Another kit provided by this invention is a kit for the diagnosis of pancreatic cancer comprising one or more of the nucleic acids coding for the marker hereinbefore described. Yet another kit provided by this invention is a kit for screening of compounds that antagonize any of the  
15           polypeptides listed in tables 2 and/or 3 or inhibit the expression of any of said polypeptides.

          The present invention pertains to a marker for diagnosis of pancreatic cancer comprising at least one polypeptide selected from the group consisting of the polypeptides  
20           listed in table 6. Preferably, said marker does not include Seq ID No.s 25 and 50 to 55. In a more preferred embodiment, said marker comprises at least one of the polypeptides listed in table 5.

          The present invention also provides an in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of

25           a) obtaining a biological sample; and

          b) detecting and/or measuring the increase of at least one of the polypeptides listed in table 6.

          Preferably, said in vitro method additionally comprises the step of detecting and/or measuring the decrease of at least one of the polypeptides listed in table 5. More preferably,  
30           in said vitro method, said at least one polypeptide does not include Seq ID No.s 25 and 50 to 55. Even more preferably, in said vitro method, said biological sample is derived from the group consisting of serum, plasma, pancreatic juice and cells of pancreatic tissue.

The present invention further provides an in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of

a) obtaining a biological sample; and

b) detecting and/or measuring the increase of at least one nucleic acid coding for the marker hereinbefore described.

Preferably, in said in vitro method, said nucleic acid molecule is RNA or DNA. More preferably, in said in vitro method, said DNA is a cDNA.

In a further more preferred embodiment of any of the in vitro methods hereinbefore described, the expression levels of at least one of said nucleic acids in an individual suspected to suffer from pancreatic cancer and/or to be susceptible to pancreatic cancer is compared to the expression levels of the same nucleic acids in a healthy individual. In a most preferred embodiment of any of the in vitro methods hereinbefore described, the expression level of said marker in an individual suspected to suffer from pancreatic cancer and/or to be susceptible to pancreatic cancer is compared to the expression levels of the same marker in a healthy individual.

In a further preferred embodiment of the in vitro method hereinbefore described, an increase of the expression levels of said marker is indicative of pancreatic cancer or the susceptibility to pancreatic cancer.

The present invention also pertains to a screening method for identifying and/or obtaining a compound which interacts with a polypeptide selected from the group consisting of the polypeptides listed in table 6 whose expression is upregulated in pancreatic cancer, comprising the steps of

a) contacting said polypeptide with a compound or a plurality of compounds under conditions which allow interaction of said compound with said polypeptide; and

b) detecting the interaction between said compound or plurality of compounds with said polypeptide.



Furthermore, the present invention provides a screening method for identifying and/or obtaining a compound which is an inhibitor or an antagonist of a polypeptide listed in table 6 whose expression is upregulated in pancreatic cancer, comprising the steps of

- 5 a) contacting said polypeptide with a compound identified and/or obtained by the screening method of claim 39 under conditions which allow interaction of said compound with said polypeptide;
- b) determining the activity of said polypeptide;
- c) determining the activity of said polypeptide expressed in the host as defined in (a), which has not been contacted with said compound; and
- 10 d) quantitatively relating the activity as determined in (b) and (c), wherein a decreased activity determined in (b) in comparison to (c) is indicative for an inhibitor or antagonist.

The present invention also provides a screening method for identifying and/or  
15 obtaining a compound which is an inhibitor of the expression of a polypeptide selected from the group consisting of the polypeptides listed in table 6 whose expression is upregulated in pancreatic cancer, comprising the steps of

- a) contacting a host which expresses said polypeptide with a compound,
- b) determining the expression level and/or activity of said polypeptide;
- 20 c) determining the expression level and/or activity of said polypeptide in the host as defined in (a), which has not been contacted with said compound; and
- d) quantitatively relating the expression level of said polypeptide as determined in (b) and (c), wherein a decreased expression level determined in (b) in comparison to (c) is indicative for an inhibitor of the expression of said  
25 polypeptide.

The present invention provides a compound identified and/or obtained by the screening methods hereinbefore described.

30 In addition, the present invention provides a pharmaceutical composition comprising the compound hereinbefore described. Also provided is a method for the preparation of the pharmaceutical composition hereinbefore described comprising

formulating the compound hereinbefore described in a pharmaceutically acceptable carrier or diluent.

5 The present invention provides a use of a compound hereinbefore described for the preparation of a medicament for the treatment or prevention of pancreatic cancer. Also provided is a use of a compound hereinbefore described for the preparation of a diagnostic composition for diagnosing pancreatic cancer or a predisposition for pancreatic cancer. In a preferred embodiment, the uses hereinbefore described relate to a compound comprising an antibody, an antibody-derivative, an antibody fragment, a peptide or an antisense  
10 construct.

Within the scope of the present invention, antibodies against the proteins listed in tables 5 and/or 6, or antigen-binding fragments thereof, may be used in an in vitro method for the diagnosis of pancreatic cancer.

15

In order to efficiently perform diagnostic screenings, the present invention provides a kit for the diagnosis of pancreatic cancer comprising one or more of the antibodies, or antigen-binding fragments thereof, described above. Another kit provided by this invention is a kit for the diagnosis of pancreatic cancer comprising one or more of  
20 the nucleic acids coding for the marker hereinbefore described. Yet another kit provided by this invention is a kit for screening of compounds that antagonize any of the polypeptides listed in tables 5 and/or 6 or inhibit the expression of any of said polypeptides.

25

In the present invention, the proteins, compounds, kits, methods and uses substantially as herein before described, especially with reference to the foregoing examples are also claimed.

**Examples:**

**Collection of tissue samples**

- 5           Pancreatic carcinomas and adjacent tissue were collected from the patients listed in table 1.

Samples were collected shortly after the resection (less than 30 minutes), and fast frozen in liquid nitrogen for about 1 minute, then stored in a freezer at a temperature of  $-80^{\circ}\text{C}$ .

- 10   **Characterization of formalin-fixed specimens**

Histopathological characterization was carried out by using hematoxylin-eosin-stained sections of formalin-fixed and paraffin-embedded specimens. Tumors were classified using the WHO system. The types of pancreatic carcinomas included in the study are shown in table 1.

15

- 20           The twelve pancreatic carcinoma samples used in this study were ductal carcinomas which constitute the overwhelming proportion of pancreatic carcinomas. The patient-matched samples from histologically normal tissue surrounding the carcinoma were used as controls. We carried out 12 pairs of 2-dimensional electrophoresis maps for comparing protein expression between tumor tissue and normal control tissue. For protein identification, the samples were pooled, thus generating pan-Carcinoma and pan-Normal protein extracts. Quantification was carried out in two steps: (I) Gels from the pooled samples were compared using the PDQuest image analysis software. (II) The changes identified at the level of the pooled samples were cross-validated by an analysis of the individual samples. The change factors shown in table 2, 3, 5 and 6 were determined using the pooled samples.
- 25

### Preparation of samples for electrophoresis

Samples cleaned of clots and contaminating tissue were frozen in liquid nitrogen, then ground to powder. Samples were suspended in lysis buffer (8M urea, 4% CHAPS, 40mMol/L Tris-Cl, 0.5% carrier ampholytes, 100mMol/L DTT and 0.1µg/µl PMSF) and  
5 centrifuged at 12000rpm for 30 minutes. The supernatants were stored at -80°C. The protein concentration in the extracts was determined by the Bradford method (Bradford, M. Anal. Biochem. 72, 248 (1976)).

### Two-dimensional gel electrophoresis

10 Samples containing 1 mg of protein were loaded onto the rehydrated IPG strip (18 cm, pH3~10) by using the cup loading method. IEF was performed using Pharmacia Multiphor apparatuses under the following conditions: First, the voltage was increased 200V-5000V over 24hrs, then a constant voltage of 5000V was applied for 24 hrs, the running temperature was 20°C. After IEF, the strips were equilibrated with 10 ml  
15 equilibration solution I (6 M Urea, 50 mM Tris pH 8.8, 30 % Glycerol, 2.0 % SDS, 30 mM Dithioerythritol) for 15 min, then for another 15 min with equilibration solution II (6 M Urea, 50 mM Tris pH 8.8, 30 % Glycerol, 2.0 % SDS, 0.23 M Iodoacetamide).

The second dimension SDS polyacrylamide gel electrophoresis (SDS-PAGE) was  
20 carried out using a Hoefer ISO\_DALT apparatus (10 gels/run, 24×20 cm), IEF strips were loaded onto 12% homogeneous polyacrylamide gels (1.5 mm x 24 cm × 20 cm). The gels were run in TGS\_Buffer (250 mM Tris, 1.92 M Glycine, 1% (w/v) SDS, pH = 8.3, Bio-Rad) at a constant voltage (80 V, 20°C).

### 25 Gel fixation and staining

Gels were fixed in 50% Methanol/20% acetic acid for 30 min, then washed in ultra-pure water for 30 min and stained with NOVEX Colloidal Blue staining Kit (Invitrogen) following the manufacturer's recommendations.

## Protein Identification

The protein identification was performed using a two-step procedure.

### In-gel digestion

5        Spots were picked and transferred into 96-well by a spot picking robot. From each gel, 600-800 spots were picked. The spots were destained with 100µl of 30% acetonitrile in 50mM ammonium bicarbonate, washed in ultra pure-water and dried in a speed vac evaporator. The dry gel pieces were digested with 10ng/µl trypsin (Promega, Madison, USA) solution in 500 nM ammonium bicarbonate at room temperature for 16 h  
10        maximum. The peptides from each spot were extracted with 20µl of 0.1% trifluore acetic acid (TFA) in 50% acetonitrile. The matrix solution consisted of 0.025%(w/v) alfa-cyano-4-hydroxy cinammic acid (Sigma) in 50% acetonitrile/0.1% TFA with internal standard peptides des-Arg-Bradykinin(Sigma, MW 904.4681 Da) and adrenocorticotrophic hormone fragment 18-39 (Sigma, MW 2465.1989 Da).

15

### Analysis by MALDI-TOF

1.5ul of peptide extract and 1.0µl of matrix solution were stimulanecously applied to the spots on the MS target. Recrystallization was carried out as specified by the instruments manufacturer. The samples were analyzed in a MALDI-time of flight Mass spectrometer  
20        (Autoflex, Bruker Analytics, Bremen, Germany). Peak annotation and database search by peptide matching was performed by in house developed software. The peptide mass was compared with theoretic peptide masses of all available proteins from all species. The monoisotopic mass was used and a mass tolerance of 0.0025% was allowed. 4 matching peptides were the minimal requirement for an identity assignent. Mismatch or  
25        miscleavage sites were not considered.

**Table 1: Clinical and histopathological characteristics of samples**

No. of Samples	Sex	Age	Tumor location	Histology	Metastasis in lymph nodes
PC-01	Male	48	Head of pancreas	Middle differentiated ductal adenocarcinoma	Yes
PC-02	Male	68	Head of pancreas	Poorly differentiated adenocarcinoma	Yes
PC-03	Male	44	Head of pancreas	Poorly differentiated ductal adenocarcinoma, clear cell type	Yes
PC-04	Male	66	Head of pancreas	Well differentiated ductal adenocarcinoma	Yes
PC-05	Female	45	Head of pancreas	Well differentiated ductal adenocarcinoma	No
PC-06	Female	65	Head of pancreas	Well differentiated ductal adenocarcinoma	Yes
PC-07	Male	59	Head of pancreas	Middle differentiated ductal adenocarcinoma	Yes
PC-08	Female	62	Body of pancreas	Well differentiated ductal adenocarcinoma	Yes
PC-09	Male	54	Head of pancreas	Middle differentiated ductal adenocarcinoma	No
PC-10	Female	53	Head of pancreas	Well differentiated ductal adenocarcinoma	No
PC-11	Female	54	Head of pancreas	Middle differentiated ductal adenocarcinoma	Yes
PC-12	Female	69	Head of pancreas	Middle differentiated ductal adenocarcinoma	Yes

**Table 2: Proteins up-regulated in pancreatic cancer I**

Protein	Acc No	Description	Seq ID No.	Fold Change
sw:CATD_HUMAN	P07339	Cathepsin D precursor (ec 3.4.23.5).	1	<2
sw:IDHC_HUMAN	O75874	Isocitrate dehydrogenase [NADP] cytoplasmic (ec 1.1.1.42)	2	2
sw:GELS_HUMAN	P06396	Gelsolin precursor, plasma	3	3
sw:CFAB_HUMAN	P00751	Complement factor B precursor (ec 3.4.21.47)	4	5
sw:AAC4_HUMAN	O43707	Alpha-actinin 4 (non-muscle alpha-actinin 4)	5	2
sw:AAC1_HUMAN	P12814	Alpha-actinin 1 (alpha-actinin cytoskeletal isoform)	7	2
sw:TBA4_HUMAN	P05215	Tubulin alpha-4 chain.	8	2
sw:ABP2_HUMAN	P21333	Filamin A (Endothelial actin-binding protein)	9	4
sw:TAGL_HUMAN	P37802	Transgelin 2 (smooth muscle protein 22-alpha)	10	2
sw:TPM4_HUMAN	P07226	Tropomyosin alpha 4 chain	11	<2
sw:BGH3_HUMAN	Q15582	Transforming growth factor-beta induced protein IG-H3 precursor	6	5
sw:CALD_HUMAN	Q05682	Caldesmon (cdm)	12	2
sw:ENOL_HUMAN	Q05524	Alpha enolase	13	2
sw:ACY1_HUMAN	Q03154	Aminoacylase-1	14	5
sw:CAPB_HUMAN	P47756	F-actin capping protein beta subunit (capz beta)	15	5
sw:IPYR_HUMAN	Q15181	Inorganic pyrophosphatase	16	<2
sw:LEG3_HUMAN	P17931	Galectin-3 (galactose-specific lectin 3).	17	2

sw:POR2_HUMAN	P45880	Voltage-dependent anion-selective channel protein 2	18	<2
SW:ANX2_HUMAN	P07355	Annexin II	19	2
sw:CBP2_HUMAN	P50454	Collagen-binding protein 2 precursor	20	2
sw:COF1_HUMAN	P23528	Cofilin, non-muscle isoform	21	<2
sw:CYPH_HUMAN	P05092	Peptidyl-prolyl cis-trans isomerase A	22	<2
sw:DYI2_HUMAN	Q13409	Dynein intermediate chain 2, cytosolic	23	2
sw:ECH1_HUMAN	Q13011	Delta3,5-Delta2,4-dienoyl-coa isomerase, mitochondrial precursor	24	2
sw:MLRN_HUMAN	P24844	Myosin regulatory light chain 2	48	2
sw:PLSL_HUMAN	P13796	L-Plastin	26	<2
sw:RAN_HUMAN	P17080	GTP-binding nuclear protein ran	27	3
sw:ROK_HUMAN	Q07244	Heterogeneous nuclear ribonucleoprotein k	28	2
sw:TCTP_HUMAN	P13693	Translationally controlled tumor	29	<2
sw:TPM1_HUMAN	P09493	Tropomyosin 1 alpha chain	30	<2
sw:TYPH_HUMAN	P19971	Thymidine phosphorylase precursor	31	5
sw:AMPL_HUMAN	P28838	Cytosol aminopeptidase	32	3
sw:K1CS_HUMAN	P08727	Keratin, type i cytoskeletal 19 (cytokeratin 19)	33	4
sw:ALDX_HUMAN	P14550	Alcohol dehydrogenase [NADP+]	34	4
sw:EL3A_HUMAN	P09093	Elastase IIIa precursor	35	4
sw:DLDH_HUMAN	P09622	Dihydrolipoamide dehydrogenase, mitochondrial precursor	36	2
sw:ECHM_HUMAN	P30084	Enoyl-CoA hydratase, mitochondrial precursor	37	3
sw:HSBX_HUMAN	O14558	Heat-shock 20 kDa like-protein p20.	38	2



sw:MLEN_HUMAN	P16475	Myosin light chain alkali, non-muscle isoform	39	3
sw:CALX_HUMAN	P27824	Calnexin precursor	40	3
sw:MA32_HUMAN	Q07021	Complement component 1	41	<2
sw:NUAM_HUMAN	P28331	NADH-ubiquinone oxidoreductase 75 kda subunit, mitochondrial precursor	42	2
sw:PBEF_HUMAN	P43490	Pre-B cell enhancing factor precursor.	43	2
sw:RET1_HUMAN	P09455	Retinol-binding protein I, cellular	44	2
sw:TCPG_HUMAN	P49368	T-complex protein 1, gamma subunit	45	2
sw:RINI_HUMAN	P13489	Placental ribonuclease inhibitor	46	<2
sw:GBLP_HUMAN	P25388	Guanine nucleotide-binding protein beta subunit-like protein 12.3	47	2
sw:S109_HUMAN	P06702	Calgranulin B	49	<2

Table 3: Proteins up-regulated in pancreatic cancer II

Protein	Acc No	Description	Seq ID No	Fold Change
sw:CAPG_HUMAN	P40121	Macrophage capping protein	50	3
sw:ANX1_HUMAN	P04083	Annexin I (lipocortin I) (calpactin II)	51	4
sw:K2C7_HUMAN	P08729	Keratin, type II cytoskeletal 7	52	5
humangp:CHR13-Q15063	Q15063	Osteoblast specific factor 2 precursor	53	2
sw:TGLC_HUMAN	P21980	Protein-glutamine gamma-glutamyltransferase	54	2
sw:GDIR_HUMAN	P52565	Rho GDP-dissociation inhibitor 1	55	<2
sw:IQGI_HUMAN	P46940	Ras GTPase-activating-like protein	25	2

**Table 4. Proteins roughly classified by their involved biological processing or basic function**

<b>Protein function<sup>a</sup></b>	<b>Number<sup>b</sup></b>	<b>Percentage (%)<sup>c</sup></b>
<b>Structural constitutural and regulation of cytoskeleton</b>	61	20.8
<b>Cell cycle and metabolism</b>	74	25.3
<b>Response to external stimulus or stress</b>	61	20.8
<b>Signal transduction</b>	13	4.4
<b>Nuclear function</b>	18	6.1
<b>Transport processing</b>	19	6.5
<b>Hemostatis</b>	12	4.1
<b>Cell adhesion</b>	7	2.4
<b>Chaperon</b>	7	2.4
<b>Apoptosis</b>	3	1
<b>Unknown function</b>	11	3.7
<b>Others</b>	7	2.4
<b>Total</b>	293	100

**Table 5. Proteins with higher levels in normal pancreatic compared to cancer tissue**

Protein <sup>a</sup>	AccNo <sup>b</sup>	Description <sup>c</sup>	Fold <sup>d</sup>	Seq ID No.
<b>cytoskeletal regulation</b>				
sw:DESM_HUMAN	P17661	desmin.	3	70
<b>proteolysis and peptidolysis</b>				
sw:CBPB_HUMAN	P15086	carboxypeptidase b precursor	2	71
sw:CBP1_HUMAN	P15085	carboxypeptidase a1 precursor	Uncalculated	72
sw:CPB2_HUMAN	P50454	carboxypeptidase a2 precursor	Uncalculated	73
sw:CTRB_HUMAN	P17538	chymotrypsinogen b precursor	Uncalculated	74
sw:TRY1_HUMAN	P07477	trypsin i precursor (ec 3.4.21.4) (cationic trypsinogen).	Uncalculated	75
sw:TRY2_HUMAN	P07478	trypsin ii precursor (anionic trypsinogen).	3	76
sw:ILEU_HUMAN	P30740	leukocyte elastase inhibitor	4	77
<b>chaperon</b>				
sw:CH60_HUMAN	P10809	human. mitochondrial matrix protein p1 precursor	2	78
sw:ENPL_HUMAN	P14625	94 kda glucose-regulated protein	3	79
SW:ER29_HUMAN	P30040	endoplasmic reticulum protein erp29 precursor	2	80
sw:PDA2_HUMAN	Q13087	protein disulfide isomerase a2 precursor	2	81
sw:PDA3_HUMAN	P30101	protein disulfide isomerase a3 precursor	2	82
<b>oxidoreductase</b>				
sw:ADHB_HUMAN	P00325	alcohol dehydrogenase beta chain	<2	83
sw:GTO1_HUMAN	P78417	glutathione transferase omega 1	Uncalculated	84
sw:OXRP_HUMAN	Q9Y4L1	150 kda oxygen-regulated protein precursor	Uncalculated	85

sw:PDX4_HUMAN	Q13162	peroxiredoxin 4	<2	86
sw:ULA4_HUMAN	P30039	mawd binding protein	<2	87
<b>metabolism of biological process</b>				
sw:AMYC_HUMAN	P19961	alpha-amylase 2b precursor	3	88
sw:AMYP_HUMAN	P04746	alpha-amylase, pancreatic precursor	Uncalculated	89
sw:ATPA_HUMAN	P25705	atp synthase alpha chain, mitochondrial precursor	<2	90
sw:BAL_HUMAN	P19835	bile-salt-activated lipase precursor	3	91
sw:LIP1_HUMAN	P54315	pancreatic lipase related protein 1 precursor .	<2	92
sw:LIP2_HUMAN	P54317	pancreatic lipase related protein 2 precursor	Uncalculated	93
sw:LIPP_HUMAN	P16233	triacylglycerol lipase, pancreatic precursor	Uncalculated	94
sw:DPY2_HUMAN	Q16555	dihydropyrimidinase related protein-2		95
sw:GABT_HUMAN	P80404	4-aminobutyrate aminotransferase	2	96
sw:GATM_HUMAN	P50440	glycine amidinotransferase, mitochondrial precursor	Uncalculated	97
sw:GR78_HUMAN	P11021	78 kda glucose-regulated protein precursor (grp 78)	3	98
sw:IF32_HUMAN	Q13347	eukaryotic translation initiation factor 3 subunit 2	<2	99
sw:DPY2_HUMAN	Q16555	dihydropyrimidinase related protein-2		100
sw:PGMU_HUMAN	P36871	phosphoglucomutase	2	101
sw:PSA1_HUMAN	P25786	proteasome subunit alpha type 1	2	102
<b>heat shock protein</b>				
sw:HS27_HUMAN	P04792	heat shock 27 kda protein	Uncalculated	103
<b>signaling</b>				
SW:PD6I	Q8WUM4	programmed cell death 6 interacting protein	5	104
<b>muscle development</b>				

hsugp:057687-10-0	Q9bva2	four and a half lim domains 3	<2	105
SW:sli2	Q13643	Skeletal muscle LIM-protein 2 (SLIM 2)(Four and a half LIM domains protein 3)(FHL3).	<2	106
transport of biological process				
sw:CYB5_HUMAN	P00167	cytochrome b5.	2	107
cell adhesion				
sw:PAP1_HUMAN	Q06141	pancreatitis-associated protein 1 precursor.	Uncalculated	108
other				
SW:CA16_HUMAN	P12109	collagen alpha 1(vi) chain precursor.	5	109
SW:LUM_HUMAN	P51884	lumican precursor	3	110

**Table 6 Proteins with higher levels in pancreatic cancer compared to in normal tissue**

Protein <sup>a</sup>	AccNo <sup>b</sup>	Description <sup>c</sup>	Fold <sup>d</sup>	Seq ID No.
<b>cytoskeletal regulation</b>				
sw:FSC2_HUMAN	O14926	fascin 2 (retinal fascin).	2	56
sw:AAC1_HUMAN	P12814	alpha-actinin 1	2	7
sw:AAC4_HUMAN	O43707	alpha-actinin 4	2	5
sw:ABP2_HUMAN	P21333	endothelial actin-binding protein (alpha-filamin).	4	9
sw:ANX2_HUMAN	P07355	human annexin ii (lipocortin ii)	2	19
sw:CALD_HUMAN	Q05682	caldesmon (cdm).	2	12
sw:CAPB_HUMAN	P47756	f-actin capping protein beta subunit	5	15
sw:CAPG_HUMAN	P40121	macrophage capping protein	3	50
sw:COF1_HUMAN	P23528	cofilin, non-muscle isoform (p18).	<2	21
sw:DEST_HUMAN	P18282	destrin (actin-depolymerizing factor) (adf).	2	57
sw:DYI2_HUMAN	Q13409	dynein intermediate chain 2(fragment).	2	23
sw:GELS_HUMAN	P06396	gelsolin precursor	3	3
sw:K1CS_HUMAN	P08727	keratin, type i cytoskeletal 19	4	33
sw:K2C7_HUMAN	P08729	keratin, type ii cytoskeletal 7	5	52
sw:MLEN_HUMAN	P16475	myosin light chain alkali	3	39
sw:PLSL_HUMAN	P13796	l-plastin (lymphocyte cytosolic protein 1)	<2	26
sw:TAGL_HUMAN	P37802	transgelin (22 kda actin-binding protein).	2	10
sw:TBA4_HUMAN	P05215	tubulin alpha-4 chain.	2	8
<b>proteolysis and peptidolysis</b>				
sw:ACY1_HUMAN	Q03154	aminoacylase-1	5	14
sw:AMPL_HUMAN	P28838	cytosol aminopeptidase	3	32
sw:CATD_HUMAN	P07339	cathepsin d precursor.	<2	1

sw:CFAB_HUMAN	P00751	complement factor b precursor	5	4
sw:EL3A_HUMAN	P09093	elastase iia precursor	4	35
<b>chaperon</b>				
sw:APE_HUMAN	P02649	apolipoprotein e precursor (apo-e).	<2	59
sw:CALX_HUMAN	P27824	calnexin precursor(p90)	3	40
sw:CYPH_HUMAN	P05092	peptidyl-prolyl cis-trans isomerase a	<2	22
sw:TCPG_HUMAN	P49368	t-complex protein 1, gamma subunit	2	45
sw:CBP2_HUMAN	P50454	human. collagen-binding protein 2 precursor	2	20
tr_hum:Q96C61	Q96C61	hypothetical 88.6 kda protein	5	60
<b>oxidoreductase</b>				
sw:DLDH_HUMAN	P09622	dihydrolipoamide dehydrogenase	2	36
sw:IDHC_HUMAN	O75874	isocitrate dehydrogenase [nadp] cytoplasmic	2	2
sw:NUAM_HUMAN	P28331	nadh-ubiquinone oxidoreductase 75 kda subunit	2	42
<b>metabolism of biological process</b>				
sw:ALDX_HUMAN	P14550	alcohol dehydrogenase [nadp+]	4	34
sw:ECH1_HUMAN	Q13011	delta3,5-delta2,4-dienoyl-coa isomerase	2	24
sw:ECHM_HUMAN	P30084	enoyl-coa hydratase, mitochondrial precursor	3	37
sw:IPYR_HUMAN	Q15181	inorganic pyrophosphatase	<2	16
sw:TYPH_HUMAN	P19971	thymidine phosphorylase precursor	5	31
SW:ENOA_HUMAN	P06733	human alpha enolase	2	61
sw:ENOL_HUMAN	Q05524	alpha enolase, lung specific	2	13
sw:SYW_HUMAN	P23381	tryptophanyl-trna synthetase	2	62
<b>heat shock protein</b>				
sw:HSBX_HUMAN	O14558	heat-shock 20 kda like-protein p20.	2	38
<b>signaling</b>				
sw:GBLP_HUMAN	P25388	guanine nucleotide-binding protein beta subunit-like protein 12.3	2	47
sw:GDIR_HUMAN	P52565	rho gdp-dissociation inhibitor 1	<2	55



sw:IQG1_HUMAN	P46940	ras gtpase-activating-like protein iqgap1	2	25
sw:PBEF_HUMAN	P43490	pre-b cell enhancing factor precursor.	2	43
sw:RAN_HUMAN	P17080	gtp-binding nuclear protein ran	3	27
<b>immune response</b>				
sw:KAC_HUMAN	P01834	ig kappa chain c region.	2	63
sw:MA32_HUMAN	Q07021	pre-mrna splicing factor sf2, p32 subunit.	<2	41
<b>inflammatory reponse</b>				
sw:ANX1_HUMAN	P04083	annexin i (lipocortin i)	4	51
sw:LEG3_HUMAN	P17931	galectin-3	2	17
sw:S109_HUMAN	P06702	calgranulin b (mrp-14)	<2	49
<b>muscle development</b>				
sw:TPM1_HUMAN	P09493	tropomyosin 1 alpha chain	<2	30
sw:TPM4_HUMAN	P07226	tropomyosin alpha 4 chain	<2	11
sw:MLRN_HUMAN	P24844	myosin regulatory light chain 2	2	48
<b>transport of biological process</b>				
humangp:CHR2-Q15092	Q15092	transmembrane protein.	2	64
sw:POR2_HUMAN	P45880	voltage-dependent anion-selective channel protein 2	<2	18
sw:RET1_HUMAN	P09455	retinol-binding protein I	2	44
<b>RNA processing</b>				
humangp:CHR20-Q9P2E9	O75300	ribosome binding protein 1 (kiaa1398 protein).	<2	65
sw:RINI_HUMAN	P13489	placental ribonuclease inhibitor	<2	46
sw:ROK_HUMAN	Q07244	heterogeneous nuclear ribonucleoprotein k	2	28
<b>blood coagulation</b>				
sw:FIBG_HUMAN	P02679	fibrinogen gamma chain precursor	3	66
sw:THRB_HUMAN	P00734	prothrombin precursor	<2	67
<b>Anti-apoptosis</b>				
sw:TCTP_HUMAN	P13693	translationally controlled tumor protein (p23)	<2	29

cell adhesion				
humangp:CHR13-Q15063	Q15063	osteoblast specific factor 2 precursor	2	53
sw:BGH3_HUMAN	Q15582	transforming growth factor-beta induced protein	5	6
other				
sw:TGLC_HUMAN	P21980	tissue transglutaminase	2	54
sw:KPY1_HUMAN	P14618	Human pyruvate kinase, cytosolic thyroid hormone-binding protein	3	68
humangp:CHR19-Q96D15	Q96D15	Reticulocalbin 3 precursor.	2	69

SEQUENCE LISTING

EPO - Munich  
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05. Nov. 2003

<110> F. Hoffmann-La Roche AG

<120> Specific Markers for Pancreatic Cancer

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<170> PatentIn version 3.2

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<212> PRT

<213> Homo sapiens

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<221> Cathepsin D precursor

15 <222> (1) .. (412)

<223> Accession No. as of 06 Dec 2002: P07339

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Lys Gly Pro Val Ser Lys Tyr Ser Gln Ala Val Pro Ala Val Thr Glu  
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5 Gly Glu Ile Gly Ile Gly Thr Pro Pro Gln Cys Phe Thr Val Val Phe  
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Asp Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Ile His Cys Lys Leu  
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Leu Asp Ile Ala Cys Trp Ile His His Lys Tyr Asn Ser Asp Lys Ser  
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Gly Ser Leu Ser Gly Tyr Leu Ser Gln Asp Thr Val Ser Val Pro Cys  
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15 Gln Ser Ala Ser Ser Ala Ser Ala Leu Gly Gly Val Lys Val Glu Arg  
165 170 175  
Gln Val Phe Gly Glu Ala Thr Lys Gln Pro Gly Ile Thr Phe Ile Ala  
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Ala Lys Phe Asp Gly Ile Leu Gly Met Ala Tyr Pro Arg Ile Ser Val  
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245 250 255

Gly Ser Leu Ser Tyr Leu Asn Val Thr Arg Lys Ala Tyr Trp Gln Val  
260 265 270

5 His Leu Asp Gln Val Glu Val Ala Ser Gly Leu Thr Leu Cys Lys Glu  
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Gly Cys Glu Ala Ile Val Asp Thr Gly Thr Ser Leu Met Val Gly Pro  
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Val Asp Glu Val Arg Glu Leu Gln Lys Ala Ile Gly Ala Val Pro Leu  
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Ile Gln Gly Glu Tyr Met Ile Pro Cys Glu Lys Val Ser Thr Leu Pro  
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Ala Ile Thr Leu Lys Leu Gly Gly Lys Gly Tyr Lys Leu Ser Pro Glu  
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<212> PRT

<213> Homo sapiens

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<222> (1)..(414)

<223> Accession No. as of 06 Dec 2002: 075874

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Arg Asp Ala Thr Asn Asp Gln Val Thr Lys Asp Ala Ala Glu Ala Ile

50 55 60

Lys Lys His Asn Val Gly Val Lys Cys Ala Thr Ile Thr Pro Asp Glu

20 65 70 75 80

Lys Arg Val Glu Glu Phe Lys Leu Lys Gln Met Trp Lys Ser Pro Asn

85 90 95

Gly Thr Ile Arg Asn Ile Leu Gly Gly Thr Val Phe Arg Glu Ala Ile

100 105 110

Ile Cys Lys Asn Ile Pro Arg Leu Val Ser Gly Trp Val Lys Pro Ile  
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Gly Met Met Thr Ser Val Leu Val Cys Pro Asp Gly Lys Thr Val Glu  
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Ala Gly Phe Met Thr Lys Asp Leu Ala Ala Cys Ile Lys Gly Leu Pro  
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<210> 3

<211> 782

<212> PRT

20 <213> Homo sapiens

<220>

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<222> (1)..(782)

<223> Accession No. as of 06 Dec 2002: P06396



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Val Pro Thr Asn Leu Tyr Gly Asp Phe Phe Thr Gly Asp Ala Tyr Val  
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His Tyr Trp Leu Gly Asn Glu Cys Ser Gln Asp Glu Ser Gly Ala Ala  
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Ala Ile Phe Thr Val Gln Leu Asp Asp Tyr Leu Asn Gly Arg Ala Val  
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Arg Ala Val Glu Val Leu Pro Lys Ala Gly Ala Leu Asn Ser Asn Asp  
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Asn Arg Asp Arg Arg Thr Pro Ile Thr Val Val Lys Gln Gly Phe Glu  
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760

765

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775

780

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<211> 764

<212> PRT

10 <213> Homo sapiens

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<222> (1)..(764)

<223> Accession No. as of 06 Dec 2002: P00751

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20

25

30

Pro Gln Gly Ser Cys Ser Leu Glu Gly Val Glu Ile Lys Gly Gly Ser

35

40

45

Phe Arg Leu Leu Gln Glu Gly Gln Ala Leu Glu Tyr Val Cys Pro Ser

50

55

60

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                    85                      90                      95  
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Glu Tyr Trp Pro Arg Ser Pro Tyr Tyr Asn Val Ser Asp Glu Ile Ser  
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Phe His Cys Tyr Asp Gly Tyr Thr Leu Arg Gly Ser Ala Asn Arg Thr  
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Gly Ala Gly Tyr Cys Ser Asn Pro Gly Ile Pro Ile Gly Thr Arg Lys  
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Arg Gly Leu Thr Leu Arg Gly Ser Gln Arg Arg Thr Cys Gln Glu Gly  
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Gly Ser Trp Ser Gly Thr Glu Pro Ser Cys Gln Asp Ser Phe Met Tyr  
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Asp Thr Pro Gln Glu Val Ala Glu Ala Phe Leu Ser Ser Leu Thr Glu  
225                      230                      235                      240  
Thr Ile Glu Gly Val Asp Ala Glu Asp Gly His Gly Pro Gly Glu Gln  
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565 570 575  
Val Ala Leu Ile Lys Leu Lys Asn Lys Leu Lys Tyr Gly Gln Thr Ile  
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- 51 -

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645

650

655

Glu Arg Asp Ala Gln Tyr Ala Pro Gly Tyr Asp Lys Val Lys Asp Ile

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665

670

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675

680

685

Tyr Ala Asp Pro Asn Thr Cys Arg Gly Asp Ser Gly Gly Pro Leu Ile

690

695

700

Val His Lys Arg Ser Arg Phe Ile Gln Val Gly Val Ile Ser Trp Gly

10 705

710

715

720

Val Val Asp Val Cys Lys Asn Gln Lys Arg Gln Lys Gln Val Pro Ala

725

730

735

His Ala Arg Asp Phe His Ile Asn Leu Phe Gln Val Leu Pro Trp Leu

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<212> PRT

<213> Homo sapiens

**<220>**

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<222> (1) .. (911)

<223> Accession No. 043707

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10 35 40 45  
Glu Lys Gln Gln Arg Lys Thr Phe Thr Ala Trp Cys Asn Ser His Leu  
50 55 60  
Arg Lys Ala Gly Thr Gln Ile Glu Asn Ile Asp Glu Asp Phe Arg Asp  
65 70 75 80  
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85 90 95  
Pro Lys Pro Glu Arg Gly Lys Met Arg Val His Lys Ile Asn Asn Val  
100 105 110  
Asn Lys Ala Leu Asp Phe Ile Ala Ser Lys Gly Val Lys Leu Val Ser  
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130 135 140  
Met Ile Trp Thr Ile Ile Leu Arg Phe Ala Ile Gln Asp Ile Ser Val  
145 150 155 160

Glu Glu Thr Ser Ala Lys Glu Gly Leu Leu Leu Trp Cys Gln Arg Lys  
165 170 175

Thr Ala Pro Tyr Lys Asn Val Asn Val Gln Asn Phe His Ile Ser Trp  
180 185 190

5 Lys Asp Gly Leu Ala Phe Asn Ala Leu Ile His Arg His Arg Pro Glu  
195 200 205

Leu Ile Glu Tyr Asp Lys Leu Arg Lys Asp Asp Pro Val Thr Asn Leu  
210 215 220

Asn Asn Ala Phe Glu Val Ala Glu Lys Tyr Leu Asp Ile Pro Lys Met  
10 225 230 235 240

Leu Asp Ala Glu Asp Ile Val Asn Thr Ala Arg Pro Asp Glu Lys Ala  
245 250 255

Ile Met Thr Tyr Val Ser Ser Phe Tyr His Ala Phe Ser Gly Ala Gln  
260 265 270

15 Lys Ala Glu Thr Ala Ala Asn Arg Ile Cys Lys Val Leu Ala Val Asn  
275 280 285

Gln Glu Asn Glu His Leu Met Glu Asp Tyr Glu Lys Leu Ala Ser Asp  
290 295 300

Leu Leu Glu Trp Ile Arg Arg Thr Ile Pro Trp Leu Glu Asp Arg Val  
20 305 310 315 320

Pro Gln Lys Thr Ile Gln Glu Met Gln Gln Lys Leu Glu Asp Phe Arg  
325 330 335

Asp Tyr Arg Arg Val His Lys Pro Pro Lys Val Gln Glu Lys Cys Gln  
340 345 350

Leu Glu Ile Asn Phe Asn Thr Leu Gln Thr Lys Leu Arg Leu Ser Asn  
355 360 365

Arg Pro Ala Phe Met Pro Ser Glu Gly Lys Met Val Ser Asp Ile Asn  
370 375 380

5 Asn Gly Trp Gln His Leu Glu Gln Ala Glu Lys Gly Tyr Glu Glu Trp  
385 390 395 400

Leu Leu Asn Glu Ile Arg Arg Leu Glu Arg Leu Asp His Leu Ala Glu  
405 410 415

Lys Phe Arg Gln Lys Ala Ser Ile His Glu Ala Trp Thr Asp Gly Lys  
10 420 425 430

Glu Ala Met Leu Lys His Arg Asp Tyr Glu Thr Ala Thr Leu Ser Asp  
435 440 445

Ile Lys Ala Leu Ile Arg Lys His Glu Ala Phe Glu Ser Asp Leu Ala  
450 455 460

15 Ala His Gln Asp Arg Val Glu Gln Ile Ala Ala Ile Ala Gln Glu Leu  
465 470 475 480

Asn Glu Leu Asp Tyr Tyr Asp Ser His Asn Val Asn Thr Arg Cys Gln  
485 490 495

Lys Ile Cys Asp Gln Trp Asp Ala Leu Gly Ser Leu Thr His Ser Arg  
20 500 505 510

Arg Glu Ala Leu Glu Lys Thr Glu Lys Gln Leu Glu Ala Ile Asp Gln  
515 520 525

Leu His Leu Glu Tyr Ala Lys Arg Ala Ala Pro Phe Asn Asn Trp Met  
530 535 540

Glu Ser Ala Met Glu Asp Leu Gln Asp Met Phe Ile Val His Thr Ile  
545 550 555 560  
Glu Glu Ile Glu Gly Leu Ile Ser Ala His Asp Gln Phe Lys Ser Thr  
565 570 575  
5 Leu Pro Asp Ala Asp Arg Glu Arg Glu Ala Ile Leu Ala Ile His Lys  
580 585 590  
Glu Ala Gln Arg Ile Ala Glu Ser Asn His Ile Lys Leu Ser Gly Ser  
595 600 605  
Asn Pro Tyr Thr Thr Val Thr Pro Gln Ile Ile Asn Ser Lys Trp Glu  
10 610 615 620  
Lys Val Gln Gln Leu Val Pro Lys Arg Asp His Ala Leu Leu Glu Glu  
625 630 635 640  
Gln Ser Lys Gln Gln Ser Asn Glu His Leu Arg Arg Gln Phe Ala Ser  
645 650 655  
15 Gln Ala Asn Val Val Gly Pro Trp Ile Gln Thr Lys Met Glu Glu Ile  
660 665 670  
Gly Arg Ile Ser Ile Glu Met Asn Gly Thr Leu Glu Asp Gln Leu Ser  
675 680 685  
His Leu Lys Gln Tyr Glu Arg Ser Ile Val Asp Tyr Lys Pro Asn Leu  
20 690 695 700  
Asp Leu Leu Glu Gln Gln His Gln Leu Ile Gln Glu Ala Leu Ile Phe  
705 710 715 720  
Asp Asn Lys His Thr Asn Tyr Thr Met Glu His Ile Arg Val Gly Trp  
725 730 735

Glu Gln Leu Leu Thr Thr Ile Ala Arg Thr Ile Asn Glu Val Glu Asn  
740 745 750  
Gln Ile Leu Thr Arg Asp Ala Lys Gly Ile Ser Gln Glu Gln Met Gln  
755 760 765  
5 Glu Phe Arg Ala Ser Phe Asn His Phe Asp Lys Asp His Gly Gly Ala  
770 775 780  
Leu Gly Pro Glu Glu Phe Lys Ala Cys Leu Ile Ser Leu Gly Tyr Asp  
785 790 795 800  
Val Glu Asn Asp Arg Gln Gly Glu Ala Glu Phe Asn Arg Ile Met Ser  
10 805 810 815  
Leu Val Asp Pro Asn His Ser Gly Leu Val Thr Phe Gln Ala Phe Ile  
820 825 830  
Asp Phe Met Ser Arg Glu Thr Thr Asp Thr Asp Thr Ala Asp Gln Val  
835 840 845  
15 Ile Ala Ser Phe Lys Val Leu Ala Gly Asp Lys Asn Phe Ile Thr Ala  
850 855 860  
Glu Glu Leu Arg Arg Glu Leu Pro Pro Asp Gln Ala Glu Tyr Cys Ile  
865 870 875 880  
Ala Arg Met Ala Pro Tyr Gln Gly Pro Asp Ala Val Pro Gly Ala Leu  
20 885 890 895  
Asp Tyr Lys Ser Phe Ser Thr Ala Leu Tyr Gly Glu Ser Asp Leu  
900 905 910

<210> 6

<211> 683

<212> PRT

<213> Homo sapiens

5 <220>

<221> Transforming growth factor-beta induced protein IG-H3 precursor

<222> (1)..(683)

<223> Accession No. as of 06 Dec 2002: Q15582

<400> 6

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Met Ala Leu Phe Val Arg Leu Leu Ala Leu Ala Leu Ala Leu

1 5 10 15

Gly Pro Ala Ala Thr Leu Ala Gly Pro Ala Lys Ser Pro Tyr Gln Leu

20 25 30

15 Val Leu G. ~~Leu Arg~~ Leu Arg Gly Arg Gln His Gly Pro Asn Val

35 40 45

Cys Ala Val Gln Lys Val Ile Gly Thr Asn Arg Lys Tyr Phe Thr Asn

50 55 60

Cys Lys Gln Trp Tyr Gln Arg Lys Ile Cys Gly Lys Ser Thr Val Ile

20 65 70 75 80

Ser Tyr Glu Cys Cys Pro Gly Tyr Glu Lys Val Pro Gly Glu Lys Gly

85 90 95

Cys Pro Ala Ala Leu Pro Leu Ser Asn Leu Tyr Glu Thr Leu Gly Val

100 105 110

Val Gly Ser Thr Thr Thr Gln Leu Tyr Thr Asp Arg Thr Glu Lys Leu  
115 120 125

Arg Pro Glu Met Glu Gly Pro Gly Ser Phe Thr Ile Phe Ala Pro Ser  
130 135 140

5 Asn Glu Ala Trp Ala Ser Leu Pro Ala Glu Val Leu Asp Ser Leu Val  
145 150 155 160

Ser Asn Val Asn Ile Glu Leu Leu Asn Ala Leu Arg Tyr His Met Val  
165 170 175

Gly Arg Arg Val Leu Thr Asp Glu Leu Lys His Gly Met Thr Leu Thr  
10 180 185 190

Ser Met Tyr Gln Asn Ser Asn Ile Gln Ile His His Tyr Pro Asn Gly  
195 200 205

Ile Val Thr Val Asn Cys Ala Arg Leu Leu Lys Ala Asp His His Ala  
210 215 220

15 Thr Asn Gly Val Val His Leu Ile Asp Lys Val Ile Ser Thr Ile Thr  
225 230 235 240

Asn Asn Ile Gln Gln Ile Ile Glu Ile Glu Asp Thr Phe Glu Thr Leu  
245 250 255

Arg Ala Ala Val Ala Ala Ser Gly Leu Asn Thr Met Leu Glu Gly Asn  
20 260 265 270

Gly Gln Tyr Thr Leu Leu Ala Pro Thr Asn Glu Ala Phe Glu Lys Ile  
275 280 285

Pro Ser Glu Thr Leu Asn Arg Ile Leu Gly Asp Pro Glu Ala Leu Arg  
290 295 300



Asp Leu Leu Asn Asn His Ile Leu Lys Ser Ala Met Cys Ala Glu Ala  
305 310 315 320  
Ile Val Ala Gly Leu Ser Val Glu Thr Leu Glu Gly Thr Thr Leu Glu  
325 330 335  
5 Val Gly Cys Ser Gly Asp Met Leu Thr Ile Asn Gly Lys Ala Ile Ile  
340 345 350  
Ser Asn Lys Asp Ile Leu Ala Thr Asn Gly Val Ile His Tyr Ile Asp  
355 360 365  
Glu Leu Leu Ile Pro Asp Ser Ala Lys Thr Leu Phe Glu Leu Ala Ala  
10 370 375 380  
Glu Ser Asp Val Ser Thr Ala Ile Asp Leu Phe Arg Gln Ala Gly Leu  
385 390 395 400  
Gly Asn His Leu Ser Gly Ser Glu Arg Leu Thr Leu Leu Ala Pro Leu  
405 410 415  
15 Asn Ser Val Phe Lys Asp Gly Thr Pro Pro Ile Asp Ala His Thr Arg  
420 425 430  
Asn Leu Leu Arg Asn His Ile Ile Lys Asp Gln Leu Ala Ser Lys Tyr  
435 440 445  
Leu Tyr His Gly Gln Thr Leu Glu Thr Leu Gly Gly Lys Lys Leu Arg  
20 450 455 460  
Val Phe Val Tyr Arg Asn Ser Leu Cys Ile Glu Asn Ser Cys Ile Ala  
465 470 475 480  
Ala His Asp Lys Arg Gly Arg Tyr Gly Thr Leu Phe Thr Met Asp Arg  
485 490 495

Val Leu Thr Pro Pro Met Gly Thr Val Met Asp Val Leu Lys Gly Asp  
500 505 510

Asn Arg Phe Ser Met Leu Val Ala Ala Ile Gln Ser Ala Gly Leu Thr  
515 520 525

5 Glu Thr Leu Asn Arg Glu Gly Val Tyr Thr Val Phe Ala Pro Thr Asn  
530 535 540

Glu Ala Phe Arg Ala Leu Pro Pro Arg Glu Arg Ser Arg Leu Leu Gly  
545 550 555 560

Asp Ala Lys Glu Leu Ala Asn Ile Leu Lys Tyr His Ile Gly Asp Glu  
10 565 570 575

Ile Leu Val Ser Gly Gly Ile Gly Ala Leu Val Arg Leu Lys Ser Leu  
580 585 590

Gln Gly Asp Lys Leu Glu Val Ser Leu Lys Asn Asn Val Val Ser Val  
595 600 605

15 Asn Lys Glu Pro Val Ala Glu Pro Asp Ile Met Ala Thr Asn Gly Val  
610 615 620

Val His Val Ile Thr Asn Val Leu Gln Pro Pro Ala Asn Arg Pro Gln  
625 630 635 640

Glu Arg Gly Asp Glu Leu Ala Asp Ser Ala Leu Glu Ile Phe Lys Gln  
20 645 650 655

Ala Ser Ala Phe Ser Arg Ala Ser Gln Arg Ser Val Arg Leu Ala Pro  
660 665 670

Val Tyr Gln Lys Leu Leu Glu Arg Met Lys His  
675 680

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<211> 892  
5 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Alpha-actinin 1  
<222> (1) .. (892)  
10 <223> Accession No. P12814  
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Met Asp His Tyr Asp Ser Gln Gln Thr Asn Asp Tyr Met Gln Pro Glu  
1 5 10 15  
15 Glu Asp Trp Asp Arg Asp Leu Leu Leu Asp Pro Ala Trp Glu Lys Gln  
20 25 30  
Gln Arg Lys Thr Phe Thr Ala Trp Cys Asn Ser His Leu Arg Lys Ala  
35 40 45  
Gly Thr Gln Ile Glu Asn Ile Glu Glu Asp Phe Arg Asp Gly Leu Lys  
20 50 55 60  
Leu Met Leu Leu Leu Glu Val Ile Ser Gly Glu Arg Leu Ala Lys Pro  
65 70 75 80  
Glu Arg Gly Lys Met Arg Val His Lys Ile Ser Asn Val Asn Lys Ala  
85 90 95

Leu Asp Phe Ile Ala Ser Lys Gly Val Lys Leu Val Ser Ile Gly Ala  
100 105 110

Glu Glu Ile Val Asp Gly Asn Val Lys Met Thr Leu Gly Met Ile Trp  
115 120 125

5 Thr Ile Ile Leu Arg Phe Ala Ile Gln Asp Ile Ser Val Glu Glu Thr  
130 135 140

Ser Ala Lys Glu Gly Leu Leu Leu Trp Cys Gln Arg Lys Thr Ala Pro  
145 150 155 160

Tyr Lys Asn Val Asn Ile Gln Asn Phe His Ile Ser Trp Lys Asp Gly  
10 165 170 175

Leu Gly Phe Cys Ala Leu Ile His Arg His Arg Pro Glu Leu Ile Asp  
180 185 190

Tyr Gly Lys Leu Arg Lys Asp Asp Pro Leu Thr Asn Leu Asn Thr Ala  
195 200 205

15 Phe Asp Val Ala Glu Lys Tyr Leu Asp Ile Pro Lys Met Leu Asp Ala  
210 215 220

Glu Asp Ile Val Gly Thr Ala Arg Pro Asp Glu Lys Ala Ile Met Thr  
225 230 235 240

Tyr Val Ser Ser Phe Tyr His Ala Phe Ser Gly Ala Gln Lys Ala Glu  
20 245 250 255

Thr Ala Ala Asn Arg Ile Cys Lys Val Leu Ala Val Asn Gln Glu Asn  
260 265 270

Glu Gln Leu Met Glu Asp Tyr Glu Lys Leu Ala Ser Asp Leu Leu Glu  
275 280 285

Trp Ile Arg Arg Thr Ile Pro Trp Leu Glu Asn Arg Val Pro Glu Asn  
290 295 300  
Thr Met His Ala Met Gln Gln Lys Leu Glu Asp Phe Arg Asp Tyr Arg  
305 310 315 320  
5 Arg Leu His Lys Pro Pro Lys Val Gln Glu Lys Cys Gln Leu Glu Ile  
325 330 335  
Asn Phe Asn Thr Leu Gln Thr Lys Leu Arg Leu Ser Asn Arg Pro Ala  
340 345 350  
Phe Met Pro Ser Glu Gly Arg Met Val Ser Asp Ile Asn Asn Ala Trp  
10 355 360 365  
Gly Cys Leu Glu Gln Val Glu Lys Gly Tyr Glu Glu Trp Leu Leu Asn  
370 375 380  
Glu Ile Arg Arg Leu Glu Arg Leu Asp His Leu Ala Glu Lys Phe Arg  
385 390 395 400  
15 Gln Lys Ala Ser Ile His Glu Ala Trp Thr Asp Gly Lys Glu Ala Met  
405 410 415  
Leu Arg Gln Lys Asp Tyr Glu Thr Ala Thr Leu Ser Glu Ile Lys Ala  
420 425 430  
Leu Leu Lys Lys His Glu Ala Phe Glu Ser Asp Leu Ala Ala His Gln  
20 435 440 445  
Asp Arg Val Glu Gln Ile Ala Ala Ile Ala Gln Glu Leu Asn Glu Leu  
450 455 460  
Asp Tyr Tyr Asp Ser Pro Ser Val Asn Ala Arg Cys Gln Lys Ile Cys  
465 470 475 480

Asp Gln Trp Asp Asn Leu Gly Ala Leu Thr Gln Lys Arg Arg Glu Ala  
485 490 495

Leu Glu Arg Thr Glu Lys Leu Leu Glu Thr Ile Asp Gln Leu Tyr Leu  
500 505 510

5 Glu Tyr Ala Lys Arg Ala Ala Pro Phe Asn Asn Trp Met Glu Gly Ala  
515 520 525

Met Glu Asp Leu Gln Asp Thr Phe Ile Val His Thr Ile Glu Glu Ile  
530 535 540

Gln Gly Leu Thr Thr Ala His Glu Gln Phe Lys Ala Thr Leu Pro Asp  
10 545 550 555 560

Ala Asp Lys Glu Arg Leu Ala Ile Leu Gly Ile His Asn Glu Val Ser  
565 570 575

Lys Ile Val Gln Thr Tyr His Val Asn Met Ala Gly Thr Asn Pro Tyr  
580 585 590

15 Thr Thr Ile Thr Pro Gln Glu Ile Asn Gly Lys Trp Asp His Val Arg  
595 600 605

Gln Leu Val Pro Arg Arg Asp Gln Ala Leu Thr Glu Glu His Ala Arg  
610 615 620

Gln Gln His Asn Glu Ser Val Arg Lys Gln Phe Gly Ala Gln Ala Asn  
20 625 630 635 640

Val Ile Gly Pro Trp Ile Gln Thr Lys Met Glu Glu Ile Gly Arg Ile  
645 650 655

Ser Ile Glu Met His Gly Thr Leu Glu Asp Gln Leu Ser His Leu Arg  
660 665 670

Gln Tyr Glu Lys Ser Ile Val Asn Tyr Lys Pro Lys Ile Asp Gln Leu  
675 680 685  
Glu Gly Asp His Gln Leu Ile Gln Glu Ala Leu Ile Phe Asp Asn Lys  
690 695 700  
5 His Thr Asn Tyr Thr Met Glu His Ile Arg Val Gly Trp Glu Gln Leu  
705 710 715 720  
Leu Thr Thr Ile Ala Arg Thr Ile Asn Glu Val Glu Asn Gln Ile Leu  
725 730 735  
Thr Arg Asp Ala Lys Gly Ile Ser Gln Glu Gln Met Asn Glu Phe Arg  
10 740 745 750  
Ala Ser Phe Asn His Phe Asp Arg Asp His Ser Gly Thr Leu Gly Pro  
755 760 765  
Glu Glu Phe Lys Ala Cys Leu Ile Ser Leu Gly Tyr Asp Ile Gly Asn  
770 775 780  
15 Asp Pro Gln Gly Glu Ala Glu Phe Ala Arg Ile Met Ser Ile Val Asp  
785 790 795 800  
Pro Asn Arg Leu Gly Val Val Thr Phe Gln Ala Phe Ile Asp Phe Met  
805 810 815  
Ser Arg Glu Thr Ala Asp Thr Asp Thr Ala Asp Gln Val Met Ala Ser  
20 820 825 830  
Phe Lys Ile Leu Ala Gly Asp Lys Asn Tyr Ile Thr Met Asp Glu Leu  
835 840 845  
Arg Arg Glu Leu Pro Pro Asp Gln Ala Glu Tyr Cys Ile Ala Arg Met  
850 855 860

Ala Pro Tyr Thr Gly Pro Asp Ser Val Pro Gly Ala Leu Asp Tyr Met

865

870

875

880

Ser Phe Ser Thr Ala Leu Tyr Gly Glu Ser Asp Leu

885

890

5

<210> 8

<211> 448

<212> PRT

10 <213> Homo sapiens

<220>

<221> Tubulin alpha-4 chain

<222> (1)..(448)

<223> Accession No. P05215

15 <400> 8

Met Arg Glu Cys Ile Ser Val His Val Gly Gln Ala Gly Val Gln Met

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5

10

15

Gly Asn Ala Cys Trp Glu Leu Tyr Cys Leu Glu His Gly Ile Gln Pro

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20

25

30

Asp Gly Gln Met Pro Ser Asp Lys Thr Ile Gly Gly Gly Asp Asp Ser

35

40

45

Phe Thr Thr Phe Phe Cys Glu Thr Gly Ala Gly Lys His Val Pro Arg

50

55

60



Ala Val Phe Val Asp Leu Glu Pro Thr Val Ile Asp Glu Ile Arg Asn  
65                      70                      75                      80  
Gly Pro Tyr Arg Gln Leu Phe His Pro Glu Gln Leu Ile Thr Gly Lys  
                         85                      90                      95  
5 Glu Asp Ala Ala Asn Asn Tyr Ala Arg Gly His Tyr Thr Ile Gly Lys  
                         100                      105                      110  
Glu Ile Ile Asp Pro Val Leu Asp Arg Ile Arg Lys Leu Ser Asp Gln  
                         115                      120                      125  
Cys Thr Gly Leu Gln Gly Phe Leu Val Phe His Ser Phe Gly Gly Gly  
10           130                      135                      140  
Thr Gly Ser Gly Phe Thr Ser Leu Leu Met Glu Arg Leu Ser Val Asp  
145                      150                      155                      160  
Tyr Gly Lys Lys Ser Lys Leu Glu Phe Ser Ile Tyr Pro Ala Pro Gln  
                         165                      170                      175  
15 Val Ser Thr Ala Val Val Glu Pro Tyr Asn Ser Ile Leu Thr Thr His  
                         180                      185                      190  
Thr Thr Leu Glu His Ser Asp Cys Ala Phe Met Val Asp Asn Glu Ala  
                         195                      200                      205  
Ile Tyr Asp Ile Cys Arg Arg Asn Leu Asp Ile Glu Arg Pro Thr Tyr  
20           210                      215                      220  
Thr Asn Leu Asn Arg Leu Ile Ser Gln Ile Val Ser Ser Ile Thr Ala  
225                      230                      235                      240  
Ser Leu Arg Phe Asp Gly Ala Leu Asn Val Asp Leu Thr Glu Phe Gln  
                         245                      250                      255

Thr Asn Leu Val Pro Tyr Pro Arg Ile His Phe Pro Leu Ala Thr Tyr  
260 265 270

Ala Pro Val Ile Ser Ala Glu Lys Ala Tyr His Glu Gln Leu Ser Val  
275 280 285

5 Ala Glu Ile Thr Asn Ala Cys Phe Glu Pro Ala Asn Gln Met Val Lys  
290 295 300

Cys Asp Pro Arg His Gly Lys Tyr Met Ala Cys Cys Leu Leu Tyr Arg  
305 310 315 320

Gly Asp Val Val Pro Lys Asp Val Asn Ala Ala Ile Ala Ala Ile Lys  
10 325 330 335

Thr Lys Arg Ser Ile Gln Phe Val Asp Trp Cys Pro Thr Gly Phe Lys  
340 345 350

Val Gly Ile Asn Tyr Gln Pro Pro Thr Val Val Pro Gly Gly Asp Leu  
355 360 365

15 Ala Lys Val Gln Arg Ala Val Cys Met Leu Ser Asn Thr Thr Ala Ile  
370 375 380

Ala Glu Ala Trp Ala Arg Leu Asp His Lys Phe Asp Leu Met Tyr Ala  
385 390 395 400

Lys Arg Ala Phe Val His Trp Tyr Val Gly Glu Gly Met Glu Glu Gly  
20 405 410 415

Glu Phe Ser Glu Ala Arg Glu Asp Met Ala Ala Leu Glu Lys Asp Tyr  
420 425 430

Glu Glu Val Gly Ile Asp Ser Tyr Glu Asp Glu Asp Glu Gly Glu Glu  
435 440 445

<210> 9  
<211> 2647  
5 <212> PRT  
<213> Homo sapiens  
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<221> Filamin A  
<222> (1)..(2647)  
10 <223> Accession No. P21333  
<400> 9

Met Ser Ser Ser His Ser Arg Ala Gly Gln Ser Ala Ala Gly Ala Ala  
1 5 10 15  
15 Pro Gly Gly Gly Val Asp Thr Arg Asp Ala Glu Met Pro Ala Thr Glu  
20 25 30  
Lys Asp Leu Ala Glu Asp Ala Pro Trp Lys Lys Ile Gln Gln Asn Thr  
35 40 45  
Phe Thr Arg Trp Cys Asn Glu His Leu Lys Cys Val Ser Lys Arg Ile  
20 50 55 60  
Ala Asn Leu Gln Thr Asp Leu Ser Asp Gly Leu Arg Leu Ile Ala Leu  
65 70 75 80  
Leu Glu Val Leu Ser Gln Lys Lys Met His Arg Lys His Asn Gln Arg  
85 90 95

Pro Thr Phe Arg Gln Met Gln Leu Glu Asn Val Ser Val Ala Leu Glu  
100 105 110  
Phe Leu Asp Arg Glu Ser Ile Lys Leu Val Ser Ile Asp Ser Lys Ala  
115 120 125  
5 Ile Val Asp Gly Asn Leu Lys Leu Ile Leu Gly Leu Ile Trp Thr Leu  
130 135 140  
Ile Leu His Tyr Ser Ile Ser Met Pro Met Trp Asp Glu Glu Glu Asp  
145 150 155 160  
Glu Glu Ala Lys Lys Gln Thr Pro Lys Gln Arg Leu Leu Gly Trp Ile  
10 165 170 175  
Gln Asn Lys Leu Pro Gln Leu Pro Ile Thr Asn Phe Ser Arg Asp Trp  
180 185 190  
Gln Ser Gly Arg Ala Leu Gly Ala Leu Val Asp Ser Cys Ala Pro Gly  
195 200 205  
15 Leu Cys Pro Asp Trp Asp Ser Trp Asp Ala Ser Lys Pro Val Thr Asn  
210 215 220  
Ala Arg Glu Ala Met Gln Gln Ala Asp Asp Trp Leu Gly Ile Pro Gln  
225 230 235 240  
Val Ile Thr Pro Glu Glu Ile Val Asp Pro Asn Val Asp Glu His Ser  
20 245 250 255  
Val Met Thr Tyr Leu Ser Gln Phe Pro Lys Ala Lys Leu Lys Pro Gly  
260 265 270  
Ala Pro Leu Arg Pro Lys Leu Asn Pro Lys Lys Ala Arg Ala Tyr Gly  
275 280 285

Pro Gly Ile Glu Pro Thr Gly Asn Met Val Lys Lys Arg Ala Glu Phe  
290 295 300  
Thr Val Glu Thr Arg Ser Ala Gly Gln Gly Glu Val Leu Val Tyr Val  
305 310 315 320  
5 Glu Asp Pro Ala Gly His Gln Glu Glu Ala Lys Val Thr Ala Asn Asn  
325 330 335  
Asp Lys Asn Arg Thr Phe Ser Val Trp Tyr Val Pro Glu Val Thr Gly  
340 345 350  
Thr His Lys Val Thr Val Leu Phe Ala Gly Gln His Ile Ala Lys Ser  
10 355 360 365  
Pro Phe Glu Val Tyr Val Asp Lys Ser Gln Gly Asp Ala Ser Lys Val  
370 375 380  
Thr Ala Gln Gly Pro Gly Leu Glu Pro Ser Gly Asn Ile Ala Asn Lys  
385 390 395 400  
15 Thr Thr Tyr Phe Glu Ile Phe Thr Ala Gly Ala Gly Thr Gly Glu Val  
405 410 415  
Glu Val Val Ile Gln Asp Pro Met Gly Gln Lys Gly Thr Val Glu Pro  
420 425 430  
Gln Leu Glu Ala Arg Gly Asp Ser Thr Tyr Arg Cys Ser Tyr Gln Pro  
20 435 440 445  
Thr Met Glu Gly Val His Thr Val His Val Thr Phe Ala Gly Val Pro  
450 455 460  
Ile Pro Arg Ser Pro Tyr Thr Val Thr Val Gly Gln Ala Cys Asn Pro  
465 470 475 480

Ser Ala Cys Arg Ala Val Gly Arg Gly Leu Gln Pro Lys Gly Val Arg  
485 490 495

Val Lys Glu Thr Ala Asp Phe Lys Val Tyr Thr Lys Gly Ala Gly Ser  
500 505 510

5 Gly Glu Leu Lys Val Thr Val Lys Gly Pro Lys Gly Glu Glu Arg Val  
515 520 525

Lys Gln Lys Asp Leu Gly Asp Gly Val Tyr Gly Phe Glu Tyr Tyr Pro  
530 535 540

Met Val Pro Gly Thr Tyr Ile Val Thr Ile Thr Trp Gly Gly Gln Asn  
10 545 550 555 560

Ile Gly Arg Ser Pro Phe Glu Val Lys Val Gly Thr Glu Cys Gly Asn  
565 570 575

Gln Lys Val Arg Ala Trp Gly Pro Gly Leu Glu Gly Gly Val Val Gly  
580 585 590

15 Lys Ser Ala Asp Phe Val Val Glu Ala Ile Gly Asp Asp Val Gly Thr  
595 600 605

Leu Gly Phe Ser Val Glu Gly Pro Ser Gln Ala Lys Ile Glu Cys Asp  
610 615 620

Asp Lys Gly Asp Gly Ser Cys Asp Val Arg Tyr Trp Pro Gln Glu Ala  
20 625 630 635 640

Gly Glu Tyr Ala Val His Val Leu Cys Asn Ser Glu Asp Ile Arg Leu  
645 650 655

Ser Pro Phe Met Ala Asp Ile Arg Asp Ala Pro Gln Asp Phe His Pro  
660 665 670

Asp Arg Val Lys Ala Arg Gly Pro Gly Leu Glu Lys Thr Gly Val Ala  
675 680 685

Val Asn Lys Pro Ala Glu Phe Thr Val Asp Ala Lys His Gly Gly Lys  
690 695 700

5 Ala Pro Leu Arg Val Gln Val Gln Asp Asn Glu Gly Cys Pro Val Glu  
705 710 715 720

Ala Leu Val Lys Asp Asn Gly Asn Gly Thr Tyr Ser Cys Ser Tyr Val  
725 730 735

Pro Arg Lys Pro Val Lys His Thr Ala Met Val Ser Trp Gly Gly Val  
10 740 745 750

Ser Ile Pro Asn Ser Pro Phe Arg Val Asn Val Gly Ala Gly Ser His  
755 760 765

Pro Asn Lys Val Lys Val Tyr Gly Pro Gly Val Ala Lys Thr Gly Leu  
770 775 780

15 Lys Ala His Glu Pro Thr Tyr Phe Thr Val Asp Cys Ala Glu Ala Gly  
785 790 795 800

Gln Gly Asp Val Ser Ile Gly Ile Lys Cys Ala Pro Gly Val Val Gly  
805 810 815

Pro Ala Glu Ala Asp Ile Asp Phe Asp Ile Ile Arg Asn Asp Asn Asp  
20 820 825 830

Thr Phe Thr Val Lys Tyr Thr Pro Arg Gly Ala Gly Ser Tyr Thr Ile  
835 840 845

Met Val Leu Phe Ala Asp Gln Ala Thr Pro Thr Ser Pro Ile Arg Val  
850 855 860

Lys Val Glu Pro Ser His Asp Ala Ser Lys Val Lys Ala Glu Gly Pro  
865 870 875 880  
Gly Leu Ser Arg Thr Gly Val Glu Leu Gly Lys Pro Thr His Phe Thr  
885 890 895  
5 Val Asn Ala Lys Ala Ala Gly Lys Gly Lys Leu Asp Val Gln Phe Ser  
900 905 910  
Gly Leu Thr Lys Gly Asp Ala Val Arg Asp Val Asp Ile Ile Asp His  
915 920 925  
His Asp Asn Thr Tyr Thr Val Lys Tyr Thr Pro Val Gln Gln Gly Pro  
10 930 935 940  
Val Gly Val Asn Val Thr Tyr Gly Gly Asp Pro Ile Pro Lys Ser Pro  
945 950 955 960  
Phe Ser Val Ala Val Ser Pro Ser Leu Asp Leu Ser Lys Ile Lys Val  
965 970 975  
15 Ser Gly Leu Gly Glu Lys Val Asp Val Gly Lys Asp Gln Glu Phe Thr  
980 985 990  
Val Lys Ser Lys Gly Ala Gly Gly Gln Gly Lys Val Ala Ser Lys Ile  
995 1000 1005  
Val Gly Pro Ser Gly Ala Ala Val Pro Cys Lys Val Glu Pro Gly  
20 1010 1015 1020  
Leu Gly Ala Asp Asn Ser Val Val Arg Phe Leu Pro Arg Glu Glu  
1025 1030 1035  
Gly Pro Tyr Glu Val Glu Val Thr Tyr Asp Gly Val Pro Val Pro  
1040 1045 1050



	Gly	Ser	Pro	Phe	Pro	Leu	Glu	Ala	Val	Ala	Pro	Thr	Lys	Pro	Ser
	1055						1060						1065		
	Lys	Val	Lys	Ala	Phe	Gly	Pro	Gly	Leu	Gln	Gly	Gly	Ser	Ala	Gly
	1070						1075						1080		
5	Ser	Pro	Ala	Arg	Phe	Thr	Ile	Asp	Thr	Lys	Gly	Ala	Gly	Thr	Gly
	1085						1090						1095		
	Gly	Leu	Gly	Leu	Thr	Val	Glu	Gly	Pro	Cys	Glu	Ala	Gln	Leu	Glu
	1100						1105						1110		
	Cys	Leu	Asp	Asn	Gly	Asp	Gly	Thr	Cys	Ser	Val	Ser	Tyr	Val	Pro
10	1115						1120						1125		
	Thr	Glu	Pro	Gly	Asp	Tyr	Asn	Ile	Asn	Ile	Leu	Phe	Ala	Asp	Thr
	1130						1135						1140		
	His	Ile	Pro	Gly	Ser	Pro	Phe	Lys	Ala	His	Val	Val	Pro	Cys	Phe
	1145						1150						1155		
15	Asp	Ala	Ser	Lys	Val	Lys	Cys	Ser	Gly	Pro	Gly	Leu	Glu	Arg	Ala
	1160						1165						1170		
	Thr	Ala	Gly	Glu	Val	Gly	Gln	Phe	Gln	Val	Asp	Cys	Ser	Ser	Ala
	1175						1180						1185		
	Gly	Ser	Ala	Glu	Leu	Thr	Ile	Glu	Ile	Cys	Ser	Glu	Ala	Gly	Leu
20	1190						1195						1200		
	Pro	Ala	Glu	Val	Tyr	Ile	Gln	Asp	His	Gly	Asp	Gly	Thr	His	Thr
	1205						1210						1215		
	Ile	Thr	Tyr	Ile	Pro	Leu	Cys	Pro	Gly	Ala	Tyr	Thr	Val	Thr	Ile
	1220						1225						1230		

	Lys Tyr	Gly Gly Gln Pro Val	Pro Asn Phe Pro Ser	Lys Leu Gln
	1235	1240	1245	
	Val Glu	Pro Ala Val Asp Thr	Ser Gly Val Gln Cys	Tyr Gly Pro
	1250	1255	1260	
5	Gly Ile	Glu Gly Gln Gly Val	Phe Arg Glu Ala Thr	Thr Glu Phe
	1265	1270	1275	
	Ser Val	Asp Ala Arg Ala Leu	Thr Gln Thr Gly Gly	Pro His Val
	1280	1285	1290	
	Lys Ala	Arg Val Ala Asn Pro	Ser Gly Asn Leu Thr	Glu Thr Tyr
10	1295	1300	1305	
	Val Gln	Asp Arg Gly Asp Gly	Met Tyr Lys Val Glu	Tyr Thr Pro
	1310	1315	1320	
	Tyr Glu	Glu Gly Leu His Ser	Val Asp Val Thr Tyr	Asp Gly Ser
	1325	1330	1335	
15	Pro Val	Pro Ser Ser Pro Phe	Gln Val Pro Val Thr	Glu Gly Cys
	1340	1345	1350	
	Asp Pro	Ser Arg Val Arg Val	His Gly Pro Gly Ile	Gln Ser Gly
	1355	1360	1365	
	Thr Thr	Asn Lys Pro Asn Lys	Phe Thr Val Glu Thr	Arg Gly Ala
20	1370	1375	1380	
	Gly Thr	Gly Gly Leu Gly Leu	Ala Val Glu Gly Pro	Ser Glu Ala
	1385	1390	1395	
	Lys Met	Ser Cys Met Asp Asn	Lys Asp Gly Ser Cys	Ser Val Glu
	1400	1405	1410	

	Tyr	Ile	Pro	Tyr	Glu	Ala	Gly	Thr	Tyr	Ser	Leu	Asn	Val	Thr	Tyr
	1415						1420						1425		
	Gly	Gly	His	Gln	Val	Pro	Gly	Ser	Pro	Phe	Lys	Val	Pro	Val	His
	1430						1435						1440		
5	Asp	Val	Thr	Asp	Ala	Ser	Lys	Val	Lys	Cys	Ser	Gly	Pro	Gly	Leu
	1445						1450						1455		
	Ser	Pro	Gly	Met	Val	Arg	Ala	Asn	Leu	Pro	Gln	Ser	Phe	Gln	Val
	1460						1465						1470		
	Asp	Thr	Ser	Lys	Ala	Gly	Val	Ala	Pro	Leu	Gln	Val	Lys	Val	Gln
10	1475						1480						1485		
	Gly	Pro	Lys	Gly	Leu	Val	Glu	Pro	Val	Asp	Val	Val	Asp	Asn	Ala
	1490						1495						1500		
	Asp	Gly	Thr	Gln	Thr	Val	Asn	Tyr	Val	Pro	Ser	Arg	Glu	Gly	Pro
	1505						1510						1515		
15	Tyr	Ser	Ile	Ser	Val	Leu	Tyr	Gly	Asp	Glu	Glu	Val	Pro	Arg	Ser
	1520						1525						1530		
	Pro	Phe	Lys	Val	Lys	Val	Leu	Pro	Thr	His	Asp	Ala	Ser	Lys	Val
	1535						1540						1545		
	Lys	Ala	Ser	Gly	Pro	Gly	Leu	Asn	Thr	Thr	Gly	Val	Pro	Ala	Ser
20	1550						1555						1560		
	Leu	Pro	Val	Glu	Phe	Thr	Ile	Asp	Ala	Lys	Asp	Ala	Gly	Glu	Gly
	1565						1570						1575		
	Leu	Leu	Ala	Val	Gln	Ile	Thr	Asp	Pro	Glu	Gly	Lys	Pro	Lys	Lys
	1580						1585						1590		

	Thr	His	Ile	Gln	Asp	Asn	His	Asp	Gly	Thr	Tyr	Thr	Val	Ala	Tyr
	1595							1600							1605
5	Val	Pro	Asp	Val	Thr	Gly	Arg	Tyr	Thr	Ile	Leu	Ile	Lys	Tyr	Gly
	1610							1615							1620
	Gly	Asp	Glu	Ile	Pro	Phe	Ser	Pro	Tyr	Arg	Val	Arg	Ala	Val	Pro
	1625							1630							1635
	Thr	Gly	Asp	Ala	Ser	Lys	Cys	Thr	Val	Thr	Val	Ser	Ile	Gly	Gly
10	1640							1645							1650
	His	Gly	Leu	Gly	Ala	Gly	Ile	Gly	Pro	Thr	Ile	Gln	Ile	Gly	Glu
	1655							1660							1665
	Glu	Thr	Val	Ile	Thr	Val	Asp	Thr	Lys	Ala	Ala	Gly	Lys	Gly	Lys
	1670							1675							1680
15	Val	Thr	Cys	Thr	Val	Cys	Thr	Pro	Asp	Gly	Ser	Glu	Val	Asp	Val
	1685							1690							1695
	Asp	Val	Val	Glu	Asn	Glu	Asp	Gly	Thr	Phe	Asp	Ile	Phe	Tyr	Thr
	1700							1705							1710
	Ala	Pro	Gln	Pro	Gly	Lys	Tyr	Val	Ile	Cys	Val	Arg	Phe	Gly	Gly
20	1715							1720							1725
	Glu	His	Val	Pro	Asn	Ser	Pro	Phe	Gln	Val	Thr	Ala	Leu	Ala	Gly
	1730							1735							1740
	Asp	Gln	Pro	Ser	Val	Gln	Pro	Pro	Leu	Arg	Ser	Gln	Gln	Leu	Ala
	1745							1750							1755

	Pro	Gln	Tyr	Thr	Tyr	Ala	Gln	Gly	Gly	Gln	Gln	Thr	Trp	Ala	Pro
	1760						1765						1770		
	Glu	Arg	Pro	Leu	Val	Gly	Val	Asn	Gly	Leu	Asp	Val	Thr	Ser	Leu
	1775						1780						1785		
5	Arg	Pro	Phe	Asp	Leu	Val	Ile	Pro	Phe	Thr	Ile	Lys	Lys	Gly	Glu
	1790						1795						1800		
	Ile	Thr	Gly	Glu	Val	Arg	Met	Pro	Ser	Gly	Lys	Val	Ala	Gln	Pro
	1805						1810						1815		
	Thr	Ile	Thr	Asp	Asn	Lys	Asp	Gly	Thr	Val	Thr	Val	Arg	Tyr	Ala
10	1820						1825						1830		
	Pro	Ser	Glu	Ala	Gly	Leu	His	Glu	Met	Asp	Ile	Arg	Tyr	Asp	Asn
	1835						1840						1845		
	Met	His	Ile	Pro	Gly	Ser	Pro	Leu	Gln	Phe	Tyr	Val	Asp	Tyr	Val
	1850						1855						1860		
15	Asn	Cys	Gly	His	Val	Thr	Ala	Tyr	Gly	Pro	Gly	Leu	Thr	His	Gly
	1865						1870						1875		
	Val	Val	Asn	Lys	Pro	Ala	Thr	Phe	Thr	Val	Asn	Thr	Lys	Asp	Ala
	1880						1885						1890		
	Gly	Glu	Gly	Gly	Leu	Ser	Leu	Ala	Ile	Glu	Gly	Pro	Ser	Lys	Ala
20	1895						1900						1905		
	Glu	Ile	Ser	Cys	Thr	Asp	Asn	Gln	Asp	Gly	Thr	Cys	Ser	Val	Ser
	1910						1915						1920		
	Tyr	Leu	Pro	Val	Leu	Pro	Gly	Asp	Tyr	Ser	Ile	Leu	Val	Lys	Tyr
	1925						1930						1935		

	Asn	Glu	Gln	His	Val	Pro	Gly	Ser	Pro	Phe	Thr	Ala	Arg	Val	Thr
	1940						1945						1950		
	Gly	Asp	Asp	Ser	Met	Arg	Met	Ser	His	Leu	Lys	Val	Gly	Ser	Ala
	1955						1960						1965		
5	Ala	Asp	Ile	Pro	Ile	Asn	Ile	Ser	Glu	Thr	Asp	Leu	Ser	Leu	Leu
	1970						1975						1980		
	Thr	Ala	Thr	Val	Val	Pro	Pro	Ser	Gly	Arg	Glu	Glu	Pro	Cys	Leu
	1985						1990						1995		
	Leu	Lys	Arg	Leu	Arg	Asn	Gly	His	Val	Gly	Ile	Ser	Phe	Val	Pro
10	2000						2005						2010		
	Lys	Glu	Thr	Gly	Glu	His	Leu	Val	His	Val	Lys	Lys	Asn	Gly	Gln
	2015						2020						2025		
	His	Val	Ala	Ser	Ser	Pro	Ile	Pro	Val	Val	Ile	Ser	Gln	Ser	Glu
	2030						2035						2040		
15	Ile	Gly	Asp	Ala	Ser	Arg	Val	Arg	Val	Ser	Gly	Gln	Gly	Leu	His
	2045						2050						2055		
	Glu	Gly	His	Thr	Phe	Glu	Pro	Ala	Glu	Phe	Ile	Ile	Asp	Thr	Arg
	2060						2065						2070		
	Asp	Ala	Gly	Tyr	Gly	Gly	Leu	Ser	Leu	Ser	Ile	Glu	Gly	Pro	Ser
20	2075						2080						2085		
	Lys	Val	Asp	Ile	Asn	Thr	Glu	Asp	Leu	Glu	Asp	Gly	Thr	Cys	Arg
	2090						2095						2100		
	Val	Thr	Tyr	Cys	Pro	Thr	Glu	Pro	Gly	Asn	Tyr	Ile	Ile	Asn	Ile
	2105						2110						2115		

	Lys	Phe	Ala	Asp	Gln	His	Val	Pro	Gly	Ser	Pro	Phe	Ser	Val	Lys
	2120							2125							2130
	Val	Thr	Gly	Glu	Gly	Arg	Val	Lys	Glu	Ser	Ile	Thr	Arg	Arg	Arg
	2135							2140							2145
5	Arg	Ala	Pro	Ser	Val	Ala	Asn	Val	Gly	Ser	His	Cys	Asp	Leu	Ser
	2150							2155							2160
	Leu	Lys	Ile	Pro	Glu	Ile	Ser	Ile	Gln	Asp	Met	Thr	Ala	Gln	Val
	2165							2170							2175
	Thr	Ser	Pro	Ser	Gly	Lys	Thr	His	Glu	Ala	Glu	Ile	Val	Glu	Gly
10	2180							2185							2190
	Glu	Asn	His	Thr	Tyr	Cys	Ile	Arg	Phe	Val	Pro	Ala	Glu	Met	Gly
	2195							2200							2205
	Thr	His	Thr	Val	Ser	Val	Lys	Tyr	Lys	Gly	Gln	His	Val	Pro	Gly
	2210							2215							2220
15	Ser	Pro	Phe	Gln	Phe	Thr	Val	Gly	Pro	Leu	Gly	Glu	Gly	Gly	Ala
	2225							2230							2235
	His	Lys	Val	Arg	Ala	Gly	Gly	Pro	Gly	Leu	Glu	Arg	Ala	Glu	Ala
	2240							2245							2250
	Gly	Val	Pro	Ala	Glu	Phe	Ser	Ile	Trp	Thr	Arg	Glu	Ala	Gly	Ala
20	2255							2260							2265
	Gly	Gly	Leu	Ala	Ile	Ala	Val	Glu	Gly	Pro	Ser	Lys	Ala	Glu	Ile
	2270							2275							2280
	Ser	Phe	Glu	Asp	Arg	Lys	Asp	Gly	Ser	Cys	Gly	Val	Ala	Tyr	Val
	2285							2290							2295

	Val	Gln	Glu	Pro	Gly	Asp	Tyr	Glu	Val	Ser	Val	Lys	Phe	Asn	Glu
	2300							2305					2310		
	Glu	His	Ile	Pro	Asp	Ser	Pro	Phe	Val	Val	Pro	Val	Ala	Ser	Pro
	2315							2320					2325		
5	Ser	Gly	Asp	Ala	Arg	Arg	Leu	Thr	Val	Ser	Ser	Leu	Gln	Glu	Ser
	2330							2335					2340		
	Gly	Leu	Lys	Val	Asn	Gln	Pro	Ala	Ser	Phe	Ala	Val	Ser	Leu	Asn
	2345							2350					2355		
	Gly	Ala	Lys	Gly	Ala	Ile	Asp	Ala	Lys	Val	His	Ser	Pro	Ser	Gly
10	2360							2365					2370		
	Ala	Leu	Glu	Glu	Cys	Tyr	Val	Thr	Glu	Ile	Asp	Gln	Asp	Lys	Tyr
	2375							2380					2385		
	Ala	Val	Arg	Phe	Ile	Pro	Arg	Glu	Asn	Gly	Val	Tyr	Leu	Ile	Asp
	2390							2395					2400		
15	Val	Lys	Phe	Asn	Gly	Thr	His	Ile	Pro	Gly	Ser	Pro	Phe	Lys	Ile
	2405							2410					2415		
	Arg	Val	Gly	Glu	Pro	Gly	His	Gly	Gly	Asp	Pro	Gly	Leu	Val	Ser
	2420							2425					2430		
	Ala	Tyr	Gly	Ala	Gly	Leu	Glu	Gly	Gly	Val	Thr	Gly	Asn	Pro	Ala
20	2435							2440					2445		
	Glu	Phe	Val	Val	Asn	Thr	Ser	Asn	Ala	Gly	Ala	Gly	Ala	Leu	Ser
	2450							2455					2460		
	Val	Thr	Ile	Asp	Gly	Pro	Ser	Lys	Val	Lys	Met	Asp	Cys	Gln	Glu
	2465							2470					2475		





<210> 10  
<211> 199  
5 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Transgelin 2  
<222> (1)..(199)  
10 <223> Accession No. as of 06 Dec 2002: P37802  
<400> 10

Met Ala Asn Arg Gly Pro Ala Tyr Gly Leu Ser Arg Glu Val Gln Gln  
1                    5                    10                    15  
15 Lys Ile Glu Lys Gln Tyr Asp Ala Asp Leu Glu Gln Ile Leu Ile Gln  
                  20                    25                    30  
Trp Ile Thr Thr Gln Cys Arg Lys Asp Val Gly Arg Pro Gln Pro Gly  
                  35                    40                    45  
Arg Glu Asn Phe Gln Asn Trp Leu Lys Asp Gly Thr Val Leu Cys Glu  
20           50                    55                    60  
Leu Ile Asn Ala Leu Tyr Pro Glu Gly Gln Ala Pro Val Lys Lys Ile  
65                    70                    75                    80  
Gln Ala Ser Thr Met Ala Phe Lys Gln Met Glu Gln Ile Ser Gln Phe  
                  85                    90                    95

Leu Gln Ala Ala Glu Arg Tyr Gly Ile Asn Thr Thr Asp Ile Phe Gln  
100 105 110  
Thr Val Asp Leu Trp Glu Gly Lys Asn Met Ala Cys Val Gln Arg Thr  
115 120 125  
5 Leu Met Asn Leu Gly Gly Leu Ala Val Ala Arg Asp Asp Gly Leu Phe  
130 135 140  
Ser Gly Asp Pro Asn Trp Phe Pro Lys Lys Ser Lys Glu Asn Pro Arg  
145 150 155 160  
Asn Phe Ser Asp Asn Gln Leu Gln Glu Gly Lys Asn Val Ile Gly Leu  
10 165 170 175  
Gln Met Gly Thr Asn Arg Gly Ala Ser Gln Ala Gly Met Thr Gly Tyr  
180 185 190  
Gly Met Pro Arg Gln Ile Leu  
195

15

<210> 11  
<211> 248  
<212> PRT  
20 <213> Homo sapiens  
<220>  
<221> Tropomyosin alpha 4 chain  
<222> (1)..(248)  
<223> Accession No. P07226

<400> 11

Met Ala Gly Leu Asn Ser Leu Glu Ala Val Lys Arg Lys Ile Gln Ala  
1 5 10 15  
5 Leu Gln Gln Gln Ala Asp Glu Ala Glu Asp Arg Ala Gln Gly Leu Gln  
20 25 30  
Arg Glu Leu Asp Gly Glu Arg Glu Arg Arg Glu Lys Ala Glu Gly Asp  
35 40 45  
Val Ala Ala Leu Asn Arg Arg Ile Gln Leu Val Glu Glu Glu Leu Asp  
10 50 55 60  
Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu Glu Glu Ala  
65 70 75 80  
Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val Ile Glu Asn  
85 90 95  
15 Arg Ala Met Lys Asp Glu Glu Lys Met Glu Ile Gln Glu Met Gln Leu  
100 105 110  
Lys Glu Ala Lys His Ile Ala Glu Glu Ala Asp Arg Lys Tyr Glu Glu  
115 120 125  
Val Ala Arg Lys Leu Val Ile Leu Glu Gly Glu Leu Glu Arg Ala Glu  
20 130 135 140  
Glu Arg Ala Glu Val Ser Glu Leu Lys Cys Gly Asp Leu Glu Glu Glu  
145 150 155 160  
Leu Lys Asn Val Thr Asn Asn Leu Lys Ser Leu Glu Ala Ala Ser Glu  
165 170 175

Lys Tyr Ser Glu Lys Glu Asp Lys Tyr Glu Glu Glu Ile Lys Leu Leu

180

185

190

Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu Phe Ala Glu Arg

195

200

205

5 Thr Val Ala Lys Leu Glu Lys Thr Ile Asp Asp Leu Glu Glu Lys Leu

210

215

220

Ala Gln Ala Lys Glu Glu Asn Val Gly Leu His Gln Thr Leu Asp Gln

225

230

235

240

Thr Leu Asn Glu Leu Asn Cys Ile

10

245

<210> 12

<211> 793

15 <212> PRT

<213> Homo sapiens

<220>

<221> Caldesmon

<222> (1)..(793)

20 <223> Accession No. as of 06 Dec 2002: Q05682

<400> 12

Met Asp Asp Phe Glu Arg Arg Arg Glu Leu Arg Arg Gln Lys Arg Glu

1

5

10

15

Glu Met Arg Leu Glu Ala Glu Arg Ile Ala Tyr Gln Arg Asn Asp Asp  
20 25 30  
Asp Glu Glu Glu Ala Ala Arg Glu Arg Arg Arg Arg Ala Arg Gln Glu  
35 40 45  
5 Arg Leu Arg Gln Lys Gln Glu Glu Glu Ser Leu Gly Gln Val Thr Asp  
50 55 60  
Gln Val Glu Val Asn Ala Gln Asn Ser Val Pro Asp Glu Glu Ala Lys  
65 70 75 80  
Thr Thr Thr Thr Asn Thr Gln Val Glu Gly Asp Asp Glu Ala Ala Phe  
10 85 90 95  
Leu Glu Arg Leu Ala Arg Arg Glu Glu Arg Arg Gln Lys Arg Leu Gln  
100 105 110  
Glu Ala Leu Glu Arg Gln Lys Glu Phe Asp Pro Thr Ile Thr Asp Ala  
115 120 125  
15 Ser Leu Ser Leu Pro Ser Arg Arg Met Gln Asn Asp Thr Ala Glu Asn  
130 135 140  
Glu Thr Thr Glu Lys Glu Glu Lys Ser Glu Ser Arg Gln Glu Arg Tyr  
145 150 155 160  
Glu Ile Glu Glu Thr Glu Thr Val Thr Lys Ser Tyr Gln Lys Asn Asp  
20 165 170 175  
Trp Arg Asp Ala Glu Glu Asn Lys Lys Glu Asp Lys Glu Lys Glu Glu  
180 185 190  
Glu Glu Glu Glu Lys Pro Lys Arg Gly Ser Ile Gly Glu Asn Gln Val  
195 200 205

Glu Val Met Val Glu Glu Lys Thr Thr Glu Ser Gln Glu Glu Thr Val  
210 215 220  
Val Met Ser Leu Lys Asn Gly Gln Ile Ser Ser Glu Glu Pro Lys Gln  
225 230 235 240  
5 Glu Glu Glu Arg Glu Gln Gly Ser Asp Glu Ile Ser His His Glu Lys  
245 250 255  
Met Glu Glu Glu Asp Lys Glu Arg Ala Glu Ala Glu Arg Ala Arg Leu  
260 265 270  
Glu Ala Glu Glu Arg Glu Arg Ile Lys Ala Glu Gln Asp Lys Lys Ile  
10 275 280 285  
Ala Asp Glu Arg Ala Arg Ile Glu Ala Glu Glu Lys Ala Ala Ala Gln  
290 295 300  
Glu Arg Glu Arg Arg Glu Ala Glu Glu Arg Glu Arg Met Arg Glu Glu  
305 310 315 320  
15 Glu Lys Arg Ala Ala Glu Glu Arg Gln Arg Ile Lys Glu Glu Glu Lys  
325 330 335  
Arg Ala Ala Glu Glu Arg Gln Arg Ile Lys Glu Glu Glu Lys Arg Ala  
340 345 350  
Ala Glu Glu Arg Gln Arg Ile Lys Glu Glu Glu Lys Arg Ala Ala Glu  
20 355 360 365  
Glu Arg Gln Arg Ala Arg Ala Glu Glu Glu Glu Lys Ala Lys Val Glu  
370 375 380  
Glu Gln Lys Arg Asn Lys Gln Leu Glu Glu Lys Lys Arg Ala Met Gln  
385 390 395 400

Glu Thr Lys Ile Lys Gly Glu Lys Val Glu Gln Lys Ile Glu Gly Lys  
405 410 415

Trp Val Asn Glu Lys Lys Ala Gln Glu Asp Lys Leu Gln Thr Ala Val  
420 425 430

5 Leu Lys Lys Gln Gly Glu Glu Lys Gly Thr Lys Val Gln Ala Lys Arg  
435 440 445

Glu Lys Leu Gln Glu Asp Lys Pro Thr Phe Lys Lys Glu Glu Ile Lys  
450 455 460

Asp Glu Lys Ile Lys Lys Asp Lys Glu Pro Lys Glu Glu Val Lys Ser  
10 465 470 475 480

Phe Met Asp Arg Lys Lys Gly Phe Thr Glu Val Lys Ser Gln Asn Gly  
485 490 495

Glu Phe Met Thr His Lys Leu Lys His Thr Glu Asn Thr Phe Ser Arg  
500 505 510

15 Pro Gly Gly Arg Ala Ser Val Asp Thr Lys Glu Ala Glu Gly Ala Pro  
515 520 525

Gln Val Glu Ala Gly Lys Arg Leu Glu Glu Leu Arg Arg Arg Arg Gly  
530 535 540

Glu Thr Glu Ser Glu Glu Phe Glu Lys Leu Lys Gln Lys Gln Gln Glu  
20 545 550 555 560

Ala Ala Leu Glu Leu Glu Glu Leu Lys Lys Lys Arg Glu Glu Arg Arg  
565 570 575

Lys Val Leu Glu Glu Glu Glu Gln Arg Arg Lys Gln Glu Glu Ala Asp  
580 585 590



Arg Lys Leu Arg Glu Glu Glu Glu Lys Arg Arg Leu Lys Glu Glu Ile  
595 600 605

Glu Arg Arg Arg Ala Glu Ala Ala Glu Lys Arg Gln Lys Met Pro Glu  
610 615 620

5 Asp Gly Leu Ser Asp Asp Lys Lys Pro Phe Lys Cys Phe Thr Pro Lys  
625 630 635 640

Gly Ser Ser Leu Lys Ile Glu Glu Arg Ala Glu Phe Leu Asn Lys Ser  
645 650 655

Val Gln Lys Ser Ser Gly Val Lys Ser Thr His Gln Ala Ala Ile Val  
10 660 665 670

Ser Lys Ile Asp Ser Arg Leu Glu Gln Tyr Thr Ser Ala Ile Glu Gly  
675 680 685

Thr Lys Ser Ala Lys Pro Thr Lys Pro Ala Ala Ser Asp Leu Pro Val  
690 695 700

15 Pro Ala Glu Gly Val Arg Asn Ile Lys Ser Met Trp Glu Lys Gly Asn  
705 710 715 720

Val Phe Ser Ser Pro Thr Ala Ala Gly Thr Pro Asn Lys Glu Thr Ala  
725 730 735

Gly Leu Lys Val Gly Val Ser Ser Arg Ile Asn Glu Trp Leu Thr Lys  
20 740 745 750

Thr Pro Asp Gly Asn Lys Ser Pro Ala Pro Lys Pro Ser Asp Leu Arg  
755 760 765

Pro Gly Asp Val Ser Ser Lys Arg Asn Leu Trp Glu Lys Gln Ser Val  
770 775 780

Asp Lys Val Thr Ser Pro Thr Lys Val

785

790

5 <210> 13

<211> 458

<212> PRT

<213> Homo sapiens

<220>

10 <221> Alpha enolase

<222> (1)..(458)

<223> Accession No. as of 06 Dec 2002: Q05524

<400> 13

15 Met Ser Ile Leu Lys Ile Ile His Ala Arg Asp Ile Phe Glu Ser Arg

1 5 10 15

Gly Asn Pro Thr Val Glu Val Asp Leu Tyr Thr Asn Lys Gly Gly Leu

20 25 30

Phe Gly Arg Ala Ala Val Pro Ser Gly Ala Ser Thr Gly Ile Tyr Glu

20 35 40 45

Ala Leu Leu Glu Leu Arg Asp Asn Asp Lys Thr Arg Tyr Met Gly Gly

50 55 60

Lys Gly Val Ser Lys Ala Val Glu His Ile Ile Asn Lys Thr Ile Ala

65 70 75 80

Pro Ala Leu Ile Ser Lys Asn Val Asn Val Val Glu Gln Asp Lys Ile  
85 90 95  
Asp Asn Leu Met Leu Asp Met Asp Gly Ser Glu Asn Lys Ser Lys Phe  
100 105 110  
5 Gly Ala Asn Ala Ile Leu Gly Val Ser Leu Ala Val Cys Ser Asn Ala  
115 120 125  
Gly Ala Thr Ala Glu Lys Gly Val Pro Leu Tyr Arg His Ile Ala Asp  
130 135 140  
Leu Ala Gly Asn Asn Pro Glu Val Ile Leu Pro Val Pro Ala Phe Asn  
10 145 150 155 160  
Val Ile Asn Gly Gly Ser His Ala Gly Asn Lys Leu Ala Met Gln Glu  
165 170 175  
Phe Met Ile Pro Pro Cys Gly Ala Asp Arg Phe Asn Asp Ala Ile Arg  
180 185 190  
15 Ile Gly Ala Glu Val Tyr His Asn Leu Lys Asn Val Ile Lys Glu Lys  
195 200 205  
Tyr Gly Lys Asp Ala Thr Asn Val Gly Asp Glu Gly Gly Phe Ala Pro  
210 215 220  
Asn Ile Leu Glu Asn Lys Glu Ala Leu Glu Leu Leu Lys Thr Ala Ile  
20 225 230 235 240  
Gly Lys Ala Gly Tyr Ser Asp Lys Val Val Ile Gly Met Asp Val Ala  
245 250 255  
Ala Ser Glu Phe Tyr Arg Asp Gly Lys Tyr Asp Leu Asp Phe Asn Ser  
260 265 270

Pro Asp Asp Pro Ser Arg Tyr Ile Ser Pro Asp Gln Leu Ala Asp Leu  
275 280 285

Tyr Lys Gly Phe Val Leu Gly His Ala Val Lys Asn Tyr Pro Val Gly  
290 295 300

5 Val Ser Ile Glu Asp Pro Pro Phe Asp Gln Asp Asp Trp Gly Ala Trp  
305 310 315 320

Lys Lys Leu Phe Thr Gly Ser Leu Val Gly Ile Gln Val Val Gly Asp  
325 330 335

Asp Leu Thr Val Thr Lys Pro Glu Ala Arg Ile Ala Lys Ala Val Glu  
10 340 345 350

Glu Val Lys Ala Cys Asn Cys Leu Leu Leu Leu Lys Val Asn Gln Ile  
355 360 365

Gly Ser Val Thr Glu Ser Leu Gln Ala Cys Lys Leu Ala Gln Ser Asn  
370 375 380

15 Gly Trp Gly Val Met Pro Val Ser His Arg Leu Ser Gly Glu Thr Glu  
385 390 395 400

Asp Thr Phe Met Ala Asp Leu Val Val Gly Leu Cys Thr Gly Gln Ile  
405 410 415

Lys Thr Gly Pro Thr Cys Arg Ser Glu Arg Leu Ala Lys Tyr Asn Gln  
20 420 425 430

Leu Leu Arg Ile Glu Glu Ala Glu Ala Gly Ser Lys Ala Arg Phe Ala  
435 440 445

Gly Arg Asn Phe Arg Asn Pro Arg Ile Asn  
450 455

<210> 14  
<211> 408  
5 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Aminoacylase-1  
<222> (1)..(408)  
10 <223> Accession No. as of 06 Dec 2002: Q03154  
<400> 14

Met Thr Ser Lys Gly Pro Glu Glu Glu His Pro Ser Val Thr Leu Phe  
1 5 10 15  
15 Arg Gln Tyr Leu Arg Ile Arg Thr Val Gln Pro Lys Pro Asp Tyr Gly  
20 25 30  
Ala Ala Val Ala Phe Phe Glu Glu Thr Ala Arg Gln Leu Gly Leu Gly  
35 40 45  
Cys Gln Lys Val Glu Val Ala Pro Gly Tyr Val Val Thr Val Leu Thr  
20 50 55 60  
Trp Pro Gly Thr Asn Pro Thr Leu Ser Ser Ile Leu Leu Asn Ser His  
65 70 75 80  
Thr Asp Val Val Pro Val Phe Lys Glu His Trp Ser His Asp Pro Phe  
85 90 95

Glu Ala Phe Lys Asp Ser Glu Gly Tyr Ile Tyr Ala Arg Gly Ala Gln  
100 105 110  
Asp Met Lys Cys Val Ser Ile Gln Tyr Leu Glu Ala Val Arg Arg Leu  
115 120 125  
5 Lys Val Glu Gly His Arg Phe Pro Arg Thr Ile His Met Thr Phe Val  
130 135 140  
Pro Asp Glu Glu Val Gly Gly His Gln Gly Met Glu Leu Phe Val Gln  
145 150 155 160  
Arg Pro Glu Phe His Ala Leu Arg Ala Gly Phe Ala Leu Asp Glu Gly  
10 165 170 175  
Ile Ala Asn Pro Thr Asp Ala Phe Thr Val Phe Tyr Ser Glu Arg Ser  
180 185 190  
Pro Trp Trp Val Arg Val Thr Ser Thr Gly Arg Pro Gly His Ala Ser  
195 200 205  
15 Arg Phe Met Glu Asp Thr Ala Ala Glu Lys Leu His Lys Val Val Asn  
210 215 220  
Ser Ile Leu Ala Phe Arg Glu Lys Glu Trp Gln Arg Leu Gln Ser Asn  
225 230 235 240  
Pro His Leu Lys Glu Gly Ser Val Thr Ser Val Asn Leu Thr Lys Leu  
20 245 250 255  
Glu Gly Gly Val Ala Tyr Asn Val Ile Pro Ala Thr Met Ser Ala Ser  
260 265 270  
Phe Asp Phe Arg Val Ala Pro Asp Val Asp Phe Lys Ala Phe Glu Glu  
275 280 285

Gln Leu Gln Ser Trp Cys Gln Ala Ala Gly Glu Gly Val Thr Leu Glu  
290 295 300  
Phe Ala Gln Lys Trp Met His Pro Gln Val Thr Pro Thr Asp Asp Ser  
305 310 315 320  
5 Asn Pro Trp Trp Ala Ala Phe Ser Arg Val Cys Lys Asp Met Asn Leu  
325 330 335  
Thr Leu Glu Pro Glu Ile Met Pro Ala Ala Thr Asp Asn Arg Tyr Ile  
340 345 350  
Arg Ala Val Gly Val Pro Ala Leu Gly Phe Ser Pro Met Asn Arg Thr  
10 355 360 365  
Pro Val Leu Leu His Asp His Asp Glu Arg Leu His Glu Ala Val Phe  
370 375 380  
Leu Arg Gly Val Asp Ile Tyr Thr Arg Leu Leu Pro Ala Leu Ala Ser  
385 390 395 400  
15 Val Pro Ala Leu Pro Ser Asp Ser  
405

<210> 15  
20 <211> 277  
<212> PRT  
<213> Homo sapiens  
<220>  
<221> F-actin capping protein beta subunit

<222> (1)..(277)

<223> Accession No. as of 06 Dec 2002: P47756

<400> 15

5 Met Ser Asp Gln Gln Leu Asp Cys Ala Leu Asp Leu Met Arg Arg Leu  
1 5 10 15  
Pro Pro Gln Gln Ile Glu Lys Asn Leu Ser Asp Leu Ile Asp Leu Val  
20 25 30  
Pro Ser Leu Cys Glu Asp Leu Leu Ser Ser Val Asp Gln Pro Leu Lys  
10 35 40 45  
Ile Ala Arg Asp Lys Val Val Gly Lys Asp Tyr Leu Leu Cys Asp Tyr  
50 55 60  
Asn Arg Asp Gly Asp Ser Tyr Arg Ser Pro Trp Ser Asn Lys Tyr Asp  
65 70 75 80  
15 Pro Pro Leu Glu Asp Gly Ala Met Pro Ser Ala Arg Leu Arg Lys Leu  
85 90 95  
Glu Val Glu Ala Asn Asn Ala Phe Asp Gln Tyr Arg Asp Leu Tyr Phe  
100 105 110  
Glu Gly Gly Val Ser Ser Val Tyr Leu Trp Asp Leu Asp His Gly Phe  
20 115 120 125  
Ala Gly Val Ile Leu Ile Lys Lys Ala Gly Asp Gly Ser Lys Lys Ile  
130 135 140  
Lys Gly Cys Trp Asp Ser Ile His Val Val Glu Val Gln Glu Lys Ser  
145 150 155 160



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Ser Gly Arg Thr Ala His Tyr Lys Leu Thr Ser Thr Val Met Leu Trp  
165 170 175  
Leu Gln Thr Asn Lys Ser Gly Ser Gly Thr Met Asn Leu Gly Gly Ser  
180 185 190  
5 Leu Thr Arg Gln Met Glu Lys Asp Glu Thr Val Ser Asp Cys Ser Pro  
195 200 205  
His Ile Ala Asn Ile Gly Arg Leu Val Glu Asp Met Glu Asn Lys Ile  
210 215 220  
Arg Ser Thr Leu Asn Glu Ile Tyr Phe Gly Lys Thr Lys Asp Ile Val  
10 225 230 235 240  
Asn Gly Leu Arg Ser Ile Asp Ala Ile Pro Asp Asn Gln Lys Phe Lys  
245 250 255  
Gln Leu Gln Arg Glu Leu Ser Gln Val Leu Thr Gln Arg Gln Ile Tyr  
260 265 270  
15 Ile Gln Pro Asp Asn  
275

<210> 16

20 <211> 289

<212> PRT

<213> Homo sapiens

<220>

<221> Inorganic pyrophosphatase

<222> (1) .. (289)

<223> Accession No. as of 06 Dec 2002: Q15181

<400> 16

5 Met Ser Gly Phe Ser Thr Glu Glu Arg Ala Ala Pro Phe Ser Leu Glu  
1 5 10 15  
Tyr Arg Val Phe Leu Lys Asn Glu Lys Gly Gln Tyr Ile Ser Pro Phe  
20 25 30  
His Asp Ile Pro Ile Tyr Ala Asp Lys Asp Val Phe His Met Val Val  
10 35 40 45  
Glu Val Pro Arg Trp Ser Asn Ala Lys Met Glu Ile Ala Thr Lys Asp  
50 55 60  
Pro Leu Asn Pro Ile Lys Gln Asp Val Lys Lys Gly Lys Leu Arg Tyr  
65 70 75 80  
15 Val Ala Asn Leu Phe Pro Tyr Lys Gly Tyr Ile Trp Asn Tyr Gly Ala  
85 90 95  
Ile Pro Gln Thr Trp Glu Asp Pro Gly His Asn Asp Lys His Thr Gly  
100 105 110  
Cys Cys Gly Asp Asn Asp Pro Ile Asp Val Cys Glu Ile Gly Ser Lys  
20 115 120 125  
Val Cys Ala Arg Gly Glu Ile Ile Gly Val Lys Val Leu Gly Ile Leu  
130 135 140  
Ala Met Ile Asp Glu Gly Glu Thr Asp Trp Lys Val Ile Ala Ile Asn  
145 150 155 160

Val Asp Asp Pro Asp Ala Ala Asn Tyr Asn Asp Ile Asn Asp Val Lys  
165 170 175  
Arg Leu Lys Pro Gly Tyr Leu Glu Ala Thr Val Asp Trp Phe Arg Arg  
180 185 190  
5 Tyr Lys Val Pro Asp Gly Lys Pro Glu Asn Glu Phe Ala Phe Asn Ala  
195 200 205  
Glu Phe Lys Asp Lys Asp Phe Ala Ile Asp Ile Ile Lys Ser Thr His  
210 215 220  
Asp His Trp Lys Ala Leu Val Thr Lys Lys Thr Asn Gly Lys Gly Ile  
10 225 230 235 240  
Ser Cys Met Asn Thr Thr Leu Ser Glu Ser Pro Phe Lys Cys Asp Pro  
245 250 255  
Asp Ala Ala Arg Ala Ile Val Asp Ala Leu Pro Pro Pro Cys Glu Ser  
260 265 270  
15 Ala Cys Thr Val Pro Thr Asp Val Asp Lys Trp Phe His His Gln Lys  
275 280 285  
Asn

20

<210> 17

<211> 250

<212> PRT

<213> Homo sapiens

<220>

<221> Galectin-3 (Galactose-specific lectin 3)

<222> (1)..(250)

<223> Accession No. as of 06 Dec 2002: P17931

5 <400> 17

Met Ala Asp Asn Phe Ser Leu His Asp Ala Leu Ser Gly Ser Gly Asn  
1 5 10 15  
Pro Asn Pro Gln Gly Trp Pro Gly Ala Trp Gly Asn Gln Pro Ala Gly  
10 20 25 30  
Ala Gly Gly Tyr Pro Gly Ala Ser Tyr Pro Gly Ala Tyr Pro Gly Gln  
35 40 45  
Ala Pro Pro Gly Ala Tyr Pro Gly Gln Ala Pro Pro Gly Ala Tyr His  
50 55 60  
15 Gly Ala Pro Gly Ala Tyr Pro Gly Ala Pro Ala Pro Gly Val Tyr Pro  
65 70 75 80  
Gly Pro Pro Ser Gly Pro Gly Ala Tyr Pro Ser Ser Gly Gln Pro Ser  
85 90 95  
Ala Pro Gly Ala Tyr Pro Ala Thr Gly Pro Tyr Gly Ala Pro Ala Gly  
20 100 105 110  
Pro Leu Ile Val Pro Tyr Asn Leu Pro Leu Pro Gly Gly Val Val Pro  
115 120 125  
Arg Met Leu Ile Thr Ile Leu Gly Thr Val Lys Pro Asn Ala Asn Arg  
130 135 140

Ile Ala Leu Asp Phe Gln Arg Gly Asn Asp Val Ala Phe His Phe Asn  
145 150 155 160  
Pro Arg Phe Asn Glu Asn Asn Arg Arg Val Ile Val Cys Asn Thr Lys  
165 170 175  
5 Leu Asp Asn Asn Trp Gly Arg Glu Glu Arg Gln Ser Val Phe Pro Phe  
180 185 190  
Glu Ser Gly Lys Pro Phe Lys Ile Gln Val Leu Val Glu Pro Asp His  
195 200 205  
Phe Lys Val Ala Val Asn Asp Ala His Leu Leu Gln Tyr Asn His Arg  
10 210 215 220  
Val Lys Lys Leu Asn Glu Ile Ser Lys Leu Gly Ile Ser Gly Asp Ile  
225 230 235 240  
Asp Leu Thr Ser Ala Ser Tyr Thr Met Ile  
245 250  
15  
  
<210> 18  
  
<211> 347  
  
<212> PRT  
20 <213> Homo sapiens  
  
<220>  
  
<221> Voltage-dependent anion-selective channel protein 2 (VDAC-2)  
  
<222> (1)..(347)  
  
<223> Accession No.as of 06 Dec 2002: P45880

<400> 18

Met Ser Trp Cys Asn Glu Leu Arg Leu Pro Ala Leu Lys Gln His Ser  
1 5 10 15  
5 Ile Gly Arg Gly Leu Glu Ser His Ile Thr Met Cys Ile Pro Pro Ser  
20 25 30  
Tyr Ala Asp Leu Gly Lys Ala Ala Arg Asp Ile Phe Asn Lys Gly Phe  
35 40 45  
Gly Phe Gly Leu Val Lys Leu Asp Val Lys Thr Lys Ser Cys Ser Gly  
10 50 55 60  
Val Glu Phe Ser Thr Ser Gly Ser Ser Asn Thr Asp Thr Gly Lys Val  
65 70 75 80  
Thr Gly Thr Leu Glu Thr Lys Tyr Lys Trp Cys Glu Tyr Gly Leu Thr  
85 90 95  
15 Phe Thr Glu Lys Trp Asn Thr Asp Asn Thr Leu Gly Thr Glu Ile Ala  
100 105 110  
Ile Glu Asp Gln Ile Cys Gln Gly Leu Lys Leu Thr Phe Asp Thr Thr  
115 120 125  
Phe Ser Pro Asn Thr Gly Lys Lys Ser Gly Lys Ile Lys Ser Ser Tyr  
20 130 135 140  
Lys Arg Glu Cys Ile Asn Leu Gly Cys Asp Val Asp Phe Asp Phe Ala  
145 150 155 160  
Gly Pro Ala Ile His Gly Ser Ala Val Phe Gly Tyr Glu Gly Trp Leu  
165 170 175

Ala Gly Tyr Gln Met Thr Phe Asp Ser Ala Lys Ser Lys Leu Thr Arg  
180 185 190

Asn Asn Phe Ala Val Gly Tyr Arg Thr Gly Asp Phe Gln Leu His Thr  
195 200 205

5 Asn Val Asn Asp Gly Thr Glu Phe Gly Gly Ser Ile Tyr Gln Lys Val  
210 215 220

Cys Glu Asp Leu Asp Thr Ser Val Asn Leu Ala Trp Thr Ser Gly Thr  
225 230 235 240

Asn Cys Thr Arg Phe Gly Ile Ala Ala Lys Tyr Gln Leu Asp Pro Thr  
10 245 250 255

Ala Ser Ile Ser Ala Lys Val Asn Asn Ser Ser Leu Ile Gly Val Gly  
260 265 270

Tyr Thr Gln Thr Leu Arg Pro Gly Val Lys Leu Thr Leu Ser Ala Leu  
275 280 285

15 Val Asp Gly Lys Ser Ile Asn Ala Gly Gly His Lys Val Gly Ser Pro  
290 295 300

Trp Ser Trp Arg Leu Asn Pro Ala Glu Arg Asn Leu Trp Glu Trp Ile  
305 310 315 320

Ser Glu Asp Leu Ala Leu Ile Tyr Phe His Cys Asp Gln Gln Gln Ala  
20 325 330 335

Phe Phe Pro Pro Glu Asp Asp Gln Asn Lys Gly  
340 345

<210> 19

<211> 339

<212> PRT

<213> Homo sapiens

5 <220>

<221> Annexin II

<222> (1)..(339)

<223> Accession No. as of 06 Dec 2002: P07355

<400> 19

10

Met Ser Thr Val His Glu Ile Leu Cys Lys Leu Ser Leu Glu Gly Asp

1 5 10 15

His Ser Thr Pro Pro Ser Ala Tyr Gly Ser Val Lys Ala Tyr Thr Asn

20 25 30

15 Phe Asp Ala Glu Arg Asp Ala Leu Asn Ile Glu Thr Ala Ile Lys Thr

35 40 45

Lys Gly Val Asp Glu Val Thr Ile Val Asn Ile Leu Thr Asn Arg Ser

50 55 60

Asn Ala Gln Arg Gln Asp Ile Ala Phe Ala Tyr Gln Arg Arg Thr Lys

20 65 70 75 80

Lys Glu Leu Ala Ser Ala Leu Lys Ser Ala Leu Ser Gly His Leu Glu

85 90 95

Thr Val Ile Leu Gly Leu Leu Lys Thr Pro Ala Gln Tyr Asp Ala Ser

100 105 110



Glu Leu Lys Ala Ser Met Lys Gly Leu Gly Thr Asp Glu Asp Ser Leu  
115 120 125  
Ile Glu Ile Ile Cys Ser Arg Thr Asn Gln Glu Leu Gln Glu Ile Asn  
130 135 140  
5 Arg Val Tyr Lys Glu Met Tyr Lys Thr Asp Leu Glu Lys Asp Ile Ile  
145 150 155 160  
Ser Asp Thr Ser Gly Asp Phe Arg Lys Leu Met Val Ala Leu Ala Lys  
165 170 175  
Gly Arg Arg Ala Glu Asp Gly Ser Val Ile Asp Tyr Glu Leu Ile Asp  
10 180 185 190  
Gln Asp Ala Arg Asp Leu Tyr Asp Ala Gly Val Lys Arg Lys Gly Thr  
195 200 205  
Asp Val Pro Lys Trp Ile Ser Ile Met Thr Glu Arg Ser Val Pro His  
210 215 220  
15 Leu Gln Lys Val Phe Asp Arg Tyr Lys Ser Tyr Ser Pro Tyr Asp Met  
225 230 235 240  
Leu Glu Ser Ile Arg Lys Glu Val Lys Gly Asp Leu Glu Asn Ala Phe  
245 250 255  
Leu Asn Leu Val Gln Cys Ile Gln Asn Lys Pro Leu Tyr Phe Ala Asp  
20 260 265 270  
Arg Leu Tyr Asp Ser Met Lys Gly Lys Gly Thr Arg Asp Lys Val Leu  
275 280 285  
Ile Arg Ile Met Val Ser Arg Ser Glu Val Asp Met Leu Lys Ile Arg  
290 295 300

Ser Glu Phe Lys Arg Lys Tyr Gly Lys Ser Leu Tyr Tyr Tyr Ile Gln

305                      310                      315                      320

Gln Asp Thr Lys Gly Asp Tyr Gln Lys Ala Leu Leu Tyr Leu Cys Gly

325                      330                      335

5 Gly Asp Asp

<210> 20

10 <211> 418

<212> PRT

<213> Homo sapiens

<220>

<221> Collagen-binding protein 2 precursor

15 <222> (1)..(418)

<223> Accession No. as of 06 Dec 2002: P50454

<400> 20

Met Arg Ser Leu Leu Leu Leu Ser Ala Phe Cys Leu Leu Glu Ala Ala

20 1                      5                      10                      15

Leu Ala Ala Glu Val Lys Lys Pro Ala Ala Ala Ala Pro Gly Thr

20                      25                      30

Ala Glu Lys Leu Ser Pro Lys Ala Ala Thr Leu Ala Glu Arg Ser Ala

35                      40                      45

Gly Leu Ala Phe Ser Leu Tyr Gln Ala Met Ala Lys Asp Gln Ala Val  
50 55 60  
Glu Asn Ile Leu Val Ser Pro Val Val Val Ala Ser Ser Leu Gly Leu  
65 70 75 80  
5 Val Ser Leu Gly Gly Lys Ala Thr Thr Ala Ser Gln Ala Lys Ala Val  
85 90 95  
Leu Ser Ala Glu Gln Leu Arg Asp Glu Glu Val His Ala Gly Leu Gly  
100 105 110  
Glu Leu Leu Arg Ser Leu Ser Asn Ser Thr Ala Arg Asn Val Thr Trp  
10 115 120 125  
Lys Leu Gly Ser Arg Leu Tyr Gly Pro Ser Ser Val Ser Phe Ala Asp  
130 135 140  
Asp Phe Val Arg Ser Ser Lys Gln His Tyr Asn Cys Glu His Ser Lys  
145 150 155 160  
15 Ile Asn Phe Arg Asp Lys Arg Ser Ala Leu Gln Ser Ile Asn Glu Trp  
165 170 175  
Ala Ala Gln Thr Thr Asp Gly Lys Leu Pro Glu Val Thr Lys Asp Val  
180 185 190  
Glu Arg Thr Asp Gly Ala Leu Leu Val Asn Ala Met Phe Phe Lys Pro  
20 195 200 205  
His Trp Asp Glu Lys Phe His His Lys Met Val Asp Asn Arg Gly Phe  
210 215 220  
Met Val Thr Arg Ser Tyr Thr Val Gly Val Met Met Met His Arg Thr  
225 230 235 240

Gly Leu Tyr Asn Tyr Tyr Asp Asp Glu Lys Glu Lys Leu Gln Ile Val  
245 250 255

Glu Met Pro Leu Ala His Lys Leu Ser Ser Leu Ile Ile Leu Met Pro  
260 265 270

5 His His Val Glu Pro Leu Glu Arg Leu Glu Lys Leu Leu Thr Lys Glu  
275 280 285

Gln Leu Lys Ile Trp Met Gly Lys Met Gln Lys Lys Ala Val Ala Ile  
290 295 300

Ser Leu Pro Lys Gly Val Val Glu Val Thr His Asp Leu Gln Lys His  
10 305 310 315 320

Leu Ala Gly Leu Gly Leu Thr Glu Ala Ile Asp Lys Asn Lys Ala Asp  
325 330 335

Leu Ser Arg Met Ser Gly Lys Lys Asp Leu Tyr Leu Ala Ser Val Phe  
340 345 350

15 His Ala Thr Ala Phe Glu Leu Asp Thr Asp Gly Asn Pro Phe Asp Gln  
355 360 365

Asp Ile Tyr Gly Arg Glu Glu Leu Arg Ser Pro Lys Leu Phe Tyr Ala  
370 375 380

Asp His Pro Phe Ile Phe Leu Val Arg Asp Thr Gln Ser Gly Ser Leu  
20 385 390 395 400

Leu Phe Ile Gly Arg Leu Val Arg Pro Lys Gly Asp Lys Met Arg Asp  
405 410 415

Glu Leu

<210> 21  
<211> 166  
5 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Cofilin, non-muscle isoform  
<222> (1)..(166)  
10 <223> Accession No. as of 08 ec 2002: P23528  
<400> 21

Met Ala Ser Gly Val Ala Val Ser Asp Gly Val Ile Lys Val Phe Asn  
1 5 10 15  
15 Asp Met Lys Val Arg Lys Ser Ser Thr Pro Glu Glu Val Lys Lys Arg  
20 25 30  
Lys Lys Ala Val Leu Phe Cys Leu Ser Glu Asp Lys Lys Asn Ile Ile  
35 40 45  
Leu Glu Glu Gly Lys Glu Ile Leu Val Gly Asp Val Gly Gln Thr Val  
20 50 55 60  
Asp Asp Pro Tyr Ala Thr Phe Val Lys Met Leu Pro Asp Lys Asp Cys  
65 70 75 80  
Arg Tyr Ala Leu Tyr Asp Ala Thr Tyr Glu Thr Lys Glu Ser Lys Lys  
85 90 95

- 112 -

Glu Asp Leu Val Phe Ile Phe Trp Ala Pro Glu Ser Ala Pro Leu Lys

100

105

110

Ser Lys Met Ile Tyr Ala Ser Ser Lys Asp Ala Ile Lys Lys Lys Leu

115

120

125

5 Thr Gly Ile Lys His Glu Leu Gln Ala Asn Cys Tyr Glu Glu Val Lys

130

135

140

Asp Arg Cys Thr Leu Ala Glu Lys Leu Gly Gly Ser Ala Val Ile Ser

145

150

155

160

Leu Glu Gly Lys Pro Leu

10

165

<210> 22

<211> 165

15 <212> PRT

<213> Homo sapiens

<220>

<221> Peptidyl-prolyl cis-trans isomerase A

<222> (1)..(165)

20 <223> Accession No. as of 09 Dec 2002: P05092

<400> 22

Met Val Asn Pro Thr Val Phe Phe Asp Ile Ala Val Asp Gly Glu Pro

1

5

10

15

Leu Gly Arg Val Ser Phe Glu Leu Phe Ala Asp Lys Val Pro Lys Thr  
20 25 30  
Ala Glu Asn Phe Arg Ala Leu Ser Thr Gly Glu Lys Gly Phe Gly Tyr  
35 40 45  
5 Lys Gly Ser Cys Phe His Arg Ile Ile Pro Gly Phe Met Cys Gln Gly  
50 55 60  
Gly Asp Phe Thr Arg His Asn Gly Thr Gly Gly Lys Ser Ile Tyr Gly  
65 70 75 80  
Glu Lys Phe Glu Asp Glu Asn Phe Ile Leu Lys His Thr Gly Pro Gly  
10 85 90 95  
Ile Leu Ser Met Ala Asn Ala Gly Pro Asn Thr Asn Gly Ser Gln Phe  
100 105 110  
Phe Ile Cys Thr Ala Lys Thr Glu Trp Leu Asp Gly Lys His Val Val  
115 120 125  
15 Phe Gly Lys Val Lys Glu Gly Met Asn Ile Val Glu Ala Met Glu Arg  
130 135 140  
Phe Gly Ser Arg Asn Gly Lys Thr Ser Lys Lys Ile Thr Ile Ala Asp  
145 150 155 160  
Cys Gly Gln Leu Glu  
20 165

<210> 23

<211> 638

<212> PRT

<213> Homo sapiens

<220>

<221> Dynein intermediate chain 2, cytosolic

5 <222> (1)..(638)

<223> Accession No. as of 09 Dec 2002: Q13409

<400> 23

Met Ser Asp Lys Ser Glu Leu Lys Ala Glu Leu Glu Arg Lys Lys Gln  
10 1 5 10 15  
Arg Leu Ala Gln Ile Arg Glu Glu Lys Lys Arg Lys Glu Glu Glu Arg  
20 25 30  
Lys Lys Lys Glu Thr Asp Gln Lys Lys Glu Ala Val Ala Pro Val Gln  
35 40 45  
15 Glu Glu Ser Asp Leu Glu Lys Lys Arg Arg Glu Ala Glu Ala Leu Leu  
50 55 60  
Gln Ser Met Gly Leu Thr Pro Glu Ser Pro Ile Val Phe Ser Glu Tyr  
65 70 75 80  
Trp Val Pro Pro Pro Met Ser Pro Ser Ser Lys Ser Val Ser Thr Pro  
20 85 90 95  
Ser Glu Ala Gly Ser Gln Asp Ser Gly Asp Gly Ala Val Gly Ser Arg  
100 105 110  
Thr Leu His Trp Asp Thr Asp Pro Ser Val Leu Gln Leu His Ser Asp  
115 120 125



Ser Asp Leu Gly Arg Gly Pro Ile Lys Leu Gly Met Ala Lys Ile Thr  
130 135 140  
Gln Val Asp Phe Pro Pro Arg Glu Ile Val Thr Tyr Thr Lys Glu Thr  
145 150 155 160  
5 Gln Thr Pro Val Met Ala Gln Pro Lys Glu Asp Glu Glu Glu Asp Asp  
165 170 175  
Asp Val Val Ala Pro Lys Pro Pro Ile Glu Pro Glu Glu Glu Lys Thr  
180 185 190  
Leu Lys Lys Asp Glu Glu Asn Asp Ser Lys Ala Pro Pro His Glu Leu  
10 195 200 205  
Thr Glu Glu Glu Lys Gln Gln Ile Leu His Ser Glu Glu Phe Leu Ser  
210 215 220  
Phe Phe Asp His Ser Thr Arg Ile Val Glu Arg Ala Leu Ser Glu Gln  
225 230 235 240  
15 Ile Asn Ile Phe Phe Asp Tyr Ser Gly Arg Asp Leu Glu Asp Lys Glu  
245 250 255  
Gly Glu Ile Gln Ala Gly Ala Lys Leu Ser Leu Asn Arg Gln Phe Phe  
260 265 270  
Asp Glu Arg Trp Ser Lys His Arg Val Val Ser Cys Leu Asp Trp Ser  
20 275 280 285  
Ser Gln Tyr Pro Glu Leu Leu Val Ala Ser Tyr Asn Asn Asn Glu Asp  
290 295 300  
Ala Pro His Glu Pro Asp Gly Val Ala Leu Val Trp Asn Met Lys Tyr  
305 310 315 320

Lys Lys Thr Thr Pro Glu Tyr Val Phe His Cys Gln Ser Ala Val Met  
325 330 335

Ser Ala Thr Phe Ala Lys Phe His Pro Asn Leu Val Val Gly Gly Thr  
340 345 350

5 Tyr Ser Gly Gln Ile Val Leu Trp Asp Asn Arg Ser Asn Lys Arg Thr  
355 360 365

Pro Val Gln Arg Thr Pro Leu Ser Ala Ala Ala His Thr His Pro Val  
370 375 380

Tyr Cys Val Asn Val Val Gly Thr Gln Asn Ala His Asn Leu Ile Ser  
10 385 390 395 400

Ile Ser Thr Asp Gly Lys Ile Cys Ser Trp Ser Leu Asp Met Leu Ser  
405 410 415

His Pro Gln Asp Ser Met Glu Leu Val His Lys Gln Ser Lys Ala Val  
420 425 430

15 Ala Val Thr Ser Met Ser Phe Pro Val Gly Asp Val Asn Asn Phe Val  
435 440 445

Val Gly Ser Glu Glu Gly Ser Val Tyr Thr Ala Cys Arg His Gly Ser  
450 455 460

Lys Ala Gly Ile Ser Glu Met Phe Glu Gly His Gln Gly Pro Ile Thr  
20 465 470 475 480

Gly Ile His Cys His Ala Ala Val Gly Ala Val Asp Phe Ser His Leu  
485 490 495

Phe Val Thr Ser Ser Phe Asp Trp Thr Val Lys Leu Trp Thr Thr Lys  
500 505 510

Asn Asn Lys Pro Leu Tyr Ser Phe Glu Asp Asn Ala Asp Tyr Val Tyr  
515 520 525  
Asp Val Met Trp Ser Pro Thr His Pro Ala Leu Phe Ala Cys Val Asp  
530 535 540  
5 Gly Met Gly Arg Leu Asp Leu Trp Asn Leu Asn Asn Asp Thr Glu Val  
545 550 555 560  
Pro Thr Ala Ser Ile Ser Val Glu Gly Asn Pro Ala Leu Asn Arg Val  
565 570 575  
Arg Trp Thr His Ser Gly Arg Glu Ile Ala Val Gly Asp Ser Glu Gly  
10 580 585 590  
Gln Ile Val Ile Tyr Asp Val Gly Glu Gln Ile Ala Val Pro Arg Asn  
595 600 605  
Asp Glu Trp Ala Arg Phe Gly Arg Thr Leu Ala Glu Ile Asn Ala Asn  
610 615 620  
15 Arg Ala Asp Ala Glu Glu Glu Ala Ala Thr Arg Ile Pro Ala  
625 630 635

<210> 24

20 <211> 328

<212> PRT

<213> Homo sapiens

<220>

<221> Delta3,5-delta2,4-dienoyl-CoA isomerase, mitochondrial precursor

<222> (1)..(328)

<223> Accession No. as of 09 Dec 2002: Q13011

<400> 24

5 Met Ala Ala Gly Ile Val Ala Ser Arg Arg Leu Arg Asp Leu Leu Thr  
1 . 5 10 15  
Arg Arg Leu Thr Gly Ser Asn Tyr Pro Gly Leu Ser Ile Ser Leu Arg  
20 25 30  
Leu Thr Gly Ser Ser Ala Gln Glu Glu Ala Ser Gly Val Ala Leu Gly  
10 35 40 45  
Glu Ala Pro Asp His Ser Tyr Glu Ser Leu Arg Val Thr Ser Ala Gln  
50 55 60  
Lys His Val Leu His Val Gln Leu Asn Arg Pro Asn Lys Arg Asn Ala  
65 70 75 80  
15 Met Asn Lys Val Phe Trp Arg Glu Met Val Glu Cys Phe Asn Lys Ile  
85 90 95  
Ser Arg Asp Ala Asp Cys Arg Ala Val Val Ile Ser Gly Ala Gly Lys  
100 105 110  
Met Phe Thr Ala Gly Ile Asp Leu Met Asp Met Ala Ser Asp Ile Leu  
20 115 120 125  
Gln Pro Lys Gly Asp Asp Val Ala Arg Ile Ser Trp Tyr Leu Arg Asp  
130 135 140  
Ile Ile Thr Arg Tyr Gln Glu Thr Phe Asn Val Ile Glu Arg Cys Pro  
145 150 155 160

Lys Pro Val Ile Ala Ala Val His Gly Gly Cys Ile Gly Gly Gly Val  
165 170 175

Asp Leu Val Thr Ala Cys Asp Ile Arg Tyr Cys Ala Gln Asp Ala Phe  
180 185 190

5 Phe Gln Val Lys Glu Val Asp Val Gly Leu Ala Ala Asp Val Gly Thr  
195 200 205

Leu Glu Arg Leu Pro Lys Val Ile Gly Asn Gln Ser Leu Val Asn Glu  
210 215 220

Leu Ala Phe Thr Ala His Lys Met Met Ala Asp Glu Ala Leu Asp Ser  
10 225 230 235 240

Gly Leu Val Ser Arg Val Phe Pro Asp Lys Glu Val Met Leu Asp Ala  
245 250 255

Ala Leu Pro Leu Ala Pro Glu Ile Ser Ser Lys Thr Thr Val Leu Val  
260 265 270

15 Gln Ser Thr Lys Val Asn Leu Leu Tyr Ser Arg Asp His Ser Val Ala  
275 280 285

Glu Ser Leu Asn Tyr Val Ala Ser Trp Asn Met Ser Met Leu Gln Thr  
290 295 300

Gln Asp Leu Val Lys Ser Val Gln Pro Thr Thr Glu Asn Lys Glu Leu  
20 305 310 315 320

Lys Thr Val Thr Phe Ser Lys Leu  
325

<210> 25

<211> 1657

<212> PRT

<213> Homo sapiens

5 <220>

<221> Ras GTPase-activating-like protein IQGAP1

<222> (1)..(1657)

<223> Accession No. as of 09 Dec 2002: P46940

<400> 25

10

Met Ser Ala Ala Asp Glu Val Asp Gly Leu Gly Val Ala Arg Pro His

1 5 10 15

Tyr Gly Ser Val Leu Asp Asn Glu Arg Leu Thr Ala Glu Glu Met Asp

20 25 30

15 Glu Arg Arg Arg Gln Asn Val Ala Tyr Glu Tyr Leu Cys His Leu Glu

35 40 45

Glu Ala Lys Arg Trp Met Glu Ala Cys Leu Gly Glu Asp Leu Pro Pro

50 55 60

Thr Thr Glu Leu Glu Glu Gly Leu Arg Asn Gly Val Tyr Leu Ala Lys

20 65 70 75 80

Leu Gly Asn Phe Phe Ser Pro Lys Val Val Ser Leu Lys Lys Ile Tyr

85 90 95

Asp Arg Glu Gln Thr Arg Tyr Lys Ala Thr Gly Leu His Phe Arg His

100 105 110

Thr Asp Asn Val Ile Gln Trp Leu Asn Ala Met Asp Glu Ile Gly Leu  
115 120 125

Pro Lys Ile Phe Tyr Pro Glu Thr Thr Asp Ile Tyr Asp Arg Lys Asn  
130 135 140

5 Met Pro Arg Cys Ile Tyr Cys Ile His Ala Leu Ser Leu Tyr Leu Phe  
145 150 155 160

Lys Leu Gly Leu Ala Pro Gln Ile Gln Asp Leu Tyr Gly Lys Val Asp  
165 170 175

Phe Thr Glu Glu Glu Ile Asn Asn Met Lys Thr Glu Leu Glu Lys Tyr  
10 180 185 190

Gly Ile Gln Met Pro Ala Phe Ser Lys Ile Gly Gly Ile Leu Ala Asn  
195 200 205

Glu Leu Ser Val Asp Glu Ala Ala Leu His Ala Ala Val Ile Ala Ile  
210 215 220

15 Asn Glu Ala Ile Asp Arg Arg Ile Pro Ala Asp Thr Phe Ala Ala Leu  
225 230 235 240

Lys Asn Pro Asn Ala Met Leu Val Asn Leu Glu Glu Pro Leu Ala Ser  
245 250 255

Thr Tyr Gln Asp Ile Leu Tyr Gln Ala Lys Gln Asp Lys Met Thr Asn  
20 260 265 270

Ala Lys Asn Arg Thr Glu Asn Ser Glu Arg Glu Arg Asp Val Tyr Glu  
275 280 285

Glu Leu Leu Thr Gln Ala Glu Ile Gln Gly Asn Ile Asn Lys Val Asn  
290 295 300

Thr Phe Ser Ala Leu Ala Asn Ile Asp Leu Ala Leu Glu Gln Gly Asp  
305 310 315 320  
Ala Leu Ala Leu Phe Arg Ala Leu Gln Ser Pro Ala Leu Gly Leu Arg  
325 330 335  
5 Gly Leu Gln Gln Gln Asn Ser Asp Trp Tyr Leu Lys Gln Leu Leu Ser  
340 345 350  
Asp Lys Gln Gln Lys Arg Gln Ser Gly Gln Thr Asp Pro Leu Gln Lys  
355 360 365  
Glu Glu Leu Gln Ser Gly Val Asp Ala Ala Asn Ser Ala Ala Gln Gln  
10 370 375 380  
Tyr Gln Arg Arg Leu Ala Ala Val Ala Leu Ile Asn Ala Ala Ile Gln  
385 390 395 400  
Lys Gly Val Ala Glu Lys Thr Val Leu Glu Leu Met Asn Pro Glu Ala  
405 410 415  
15 Gln Leu Pro Gln Val Tyr Pro Phe Ala Ala Asp Leu Tyr Gln Lys Glu  
420 425 430  
Leu Ala Thr Leu Gln Arg Gln Ser Pro Glu His Asn Leu Thr His Pro  
435 440 445  
Glu Leu Ser Val Ala Val Glu Met Leu Ser Ser Val Ala Leu Ile Asn  
20 450 455 460  
Arg Ala Leu Glu Ser Gly Asp Val Asn Thr Val Trp Lys Gln Leu Ser  
465 470 475 480  
Ser Ser Val Thr Gly Leu Thr Asn Ile Glu Glu Glu Asn Cys Gln Arg  
485 490 495



Tyr Leu Asp Glu Leu Met Lys Leu Lys Ala Gln Ala His Ala Glu Asn  
500 505 510

Asn Glu Phe Ile Thr Trp Asn Asp Ile Gln Ala Cys Val Asp His Val  
515 520 525

5 Asn Leu Val Val Gln Glu Glu His Glu Arg Ile Leu Ala Ile Gly Leu  
530 535 540

Ile Asn Glu Ala Leu Asp Glu Gly Asp Ala Gln Lys Thr Leu Gln Ala  
545 550 555 560

Leu Gln Ile Pro Ala Ala Lys Leu Glu Gly Val Leu Ala Glu Val Ala  
10 565 570 575

Gln His Tyr Gln Asp Thr Leu Ile Arg Ala Lys Arg Glu Lys Ala Gln  
580 585 590

Glu Ile Gln Asp Glu Ser Ala Val Leu Trp Leu Asp Glu Ile Gln Gly  
595 600 605

15 Gly Ile Trp Gln Ser Asn Lys Asp Thr Gln Glu Ala Gln Lys Phe Ala  
610 615 620

Leu Gly Ile Phe Ala Ile Asn Glu Ala Val Glu Ser Gly Asp Val Gly  
625 630 635 640

Lys Thr Leu Ser Ala Leu Arg Ser Pro Asp Val Gly Leu Tyr Gly Val  
20 645 650 655

Ile Pro Glu Cys Gly Glu Thr Tyr His Ser Asp Leu Ala Glu Ala Lys  
660 665 670

Lys Lys Lys Leu Ala Val Gly Asp Asn Asn Ser Lys Trp Val Lys His  
675 680 685

Trp Val Lys Gly Gly Tyr Tyr Tyr Tyr His Asn Leu Glu Thr Gln Glu  
690 695 700  
Gly Gly Trp Asp Glu Pro Pro Asn Phe Val Gln Asn Ser Met Gln Leu  
705 710 715 720  
5 Ser Arg Glu Glu Ile Gln Ser Ser Ile Ser Gly Val Thr Ala Ala Tyr  
725 730 735  
Asn Arg Glu Gln Leu Trp Leu Ala Asn Glu Gly Leu Ile Thr Arg Leu  
740 745 750  
Gln Ala Arg Cys Arg Gly Tyr Leu Val Arg Gln Glu Phe Arg Ser Arg  
10 755 760 765  
Met Asn Phe Leu Lys Lys Gln Ile Pro Ala Ile Thr Cys Ile Gln Ser  
770 775 780  
Gln Trp Arg Gly Tyr Lys Gln Lys Lys Ala Tyr Gln Asp Arg Leu Ala  
785 790 795 800  
15 Tyr Leu Arg Ser His Lys Asp Glu Val Val Lys Ile Gln Ser Leu Ala  
805 810 815  
Arg Met His Gln Ala Arg Lys Arg Tyr Arg Asp Arg Leu Gln Tyr Phe  
820 825 830  
Arg Asp His Ile Asn Asp Ile Ile Lys Ile Gln Ala Phe Ile Arg Ala  
20 835 840 845  
Asn Lys Ala Arg Asp Asp Tyr Lys Thr Leu Ile Asn Ala Glu Asp Pro  
850 855 860  
Pro Met Val Val Val Arg Lys Phe Val His Leu Leu Asp Gln Ser Asp  
865 870 875 880

Gln Asp Phe Gln Glu Glu Leu Asp Leu Met Lys Met Arg Glu Glu Val  
885 890 895

Ile Thr Leu Ile Arg Ser Asn Gln Gln Leu Glu Asn Asp Leu Asn Leu  
900 905 910

5 Met Asp Ile Lys Ile Gly Leu Leu Val Lys Asn Lys Ile Thr Leu Gln  
915 920 925

Asp Val Val Ser His Ser Lys Lys Leu Thr Lys Lys Asn Lys Glu Gln  
930 935 940

Leu Ser Asp Met Met Met Ile Asn Lys Gln Lys Gly Gly Leu Lys Ala  
10 945 950 955 960

Leu Ser Lys Glu Lys Arg Glu Lys Leu Glu Ala Tyr Gln His Leu Phe  
965 970 975

Tyr Leu Leu Gln Thr Asn Pro Thr Tyr Leu Ala Lys Leu Ile Phe Gln  
980 985 990

15 Met Pro Gln Asn Lys Ser Thr Lys Phe Met Asp Ser Val Ile Phe Thr  
995 1000 1005

Leu Tyr Asn Tyr Ala Ser Asn Gln Arg Glu Glu Tyr Leu Leu Leu  
1010 1015 1020

Arg Leu Phe Lys Thr Ala Leu Gln Glu Glu Ile Lys Ser Lys Val  
20 1025 1030 1035

Asp Gln Ile Gln Glu Ile Val Thr Gly Asn Pro Thr Val Ile Lys  
1040 1045 1050

Met Val Val Ser Phe Asn Arg Gly Ala Arg Gly Gln Asn Ala Leu  
1055 1060 1065

	Arg	Gln	Ile	Leu	Ala	Pro	Val	Val	Lys	Glu	Ile	Met	Asp	Asp	Lys
	1070							1075							1080
	Ser	Leu	Asn	Ile	Lys	Thr	Asp	Pro	Val	Asp	Ile	Tyr	Lys	Ser	Trp
	1085							1090							1095
5	Val	Asn	Gln	Met	Glu	Ser	Gln	Thr	Gly	Glu	Ala	Ser	Lys	Leu	Pro
	1100							1105							1110
	Tyr	Asp	Val	Thr	Pro	Glu	Gln	Ala	Leu	Ala	His	Glu	Glu	Val	Lys
	1115							1120							1125
	Thr	Arg	Leu	Asp	Ser	Ser	Ile	Arg	Asn	Met	Arg	Ala	Val	Thr	Asp
10	1130							1135							1140
	Lys	Phe	Leu	Ser	Ala	Ile	Val	Ser	Ser	Val	Asp	Lys	Ile	Pro	Tyr
	1145							1150							1155
	Gly	Met	Arg	Phe	Ile	Ala	Lys	Val	Leu	Lys	Asp	Ser	Leu	His	Glu
	1160							1165							1170
15	Lys	Phe	Pro	Asp	Ala	Gly	Glu	Asp	Glu	Leu	Leu	Lys	Ile	Ile	Gly
	1175							1180							1185
	Asn	Leu	Leu	Tyr	Tyr	Arg	Tyr	Met	Asn	Pro	Ala	Ile	Val	Ala	Pro
	1190							1195							1200
	Asp	Ala	Phe	Asp	Ile	Ile	Asp	Leu	Ser	Ala	Gly	Gly	Gln	Leu	Thr
20	1205							1210							1215
	Thr	Asp	Gln	Arg	Arg	Asn	Leu	Gly	Ser	Ile	Ala	Lys	Met	Leu	Gln
	1220							1225							1230
	His	Ala	Ala	Ser	Asn	Lys	Met	Phe	Leu	Gly	Asp	Asn	Ala	His	Leu
	1235							1240							1245

	Ser	Ile	Ile	Asn	Glu	Tyr	Leu	Ser	Gln	Ser	Tyr	Gln	Lys	Phe	Arg
	1250						1255						1260		
	Arg	Phe	Phe	Gln	Thr	Ala	Cys	Asp	Val	Pro	Glu	Leu	Gln	Asp	Lys
	1265						1270						1275		
5	Phe	Asn	Val	Asp	Glu	Tyr	Ser	Asp	Leu	Val	Thr	Leu	Thr	Lys	Pro
	1280						1285						1290		
	Val	Ile	Tyr	Ile	Ser	Ile	Gly	Glu	Ile	Ile	Asn	Thr	His	Thr	Leu
	1295						1300						1305		
	Leu	Leu	Asp	His	Gln	Asp	Ala	Ile	Ala	Pro	Glu	His	Asn	Asp	Pro
10	1310						1315						1320		
	Ile	His	Glu	Leu	Leu	Asp	Asp	Leu	Gly	Glu	Val	Pro	Thr	Ile	Glu
	1325						1330						1335		
	Ser	Leu	Ile	Gly	Glu	Ser	Ser	Gly	Asn	Leu	Asn	Asp	Pro	Asn	Lys
	1340						1345						1350		
15	Glu	Ala	Leu	Ala	Lys	Thr	Glu	Val	Ser	Leu	Thr	Leu	Thr	Asn	Lys
	1355						1360						1365		
	Phe	Asp	Val	Pro	Gly	Asp	Glu	Asn	Ala	Glu	Met	Asp	Ala	Arg	Thr
	1370						1375						1380		
	Ile	Leu	Leu	Asn	Thr	Lys	Arg	Leu	Ile	Val	Asp	Val	Ile	Arg	Phe
20	1385						1390						1395		
	Gln	Pro	Gly	Glu	Thr	Leu	Thr	Glu	Ile	Leu	Glu	Thr	Pro	Ala	Thr
	1400						1405						1410		
	Ser	Glu	Gln	Glu	Ala	Glu	His	Gln	Arg	Ala	Met	Gln	Arg	Arg	Ala
	1415						1420						1425		

	Ile Arg Asp Ala Lys Thr Pro Asp Lys Met Lys Lys Ser Lys Ser
	1430 1435 1440
	Val Lys Glu Asp Ser Asn Leu Thr Leu Gln Glu Lys Lys Glu Lys
	1445 1450 1455
5	Ile Gln Thr Gly Leu Lys Lys Leu Thr Glu Leu Gly Thr Val Asp
	1460 1465 1470
	Pro Lys Asn Lys Tyr Gln Glu Leu Ile Asn Asp Ile Ala Arg Asp
	1475 1480 1485
	Ile Arg Asn Gln Arg Arg Tyr Arg Gln Arg Arg Lys Ala Glu Leu
10	1490 1495 1500
	Val Lys Leu Gln Gln Thr Tyr Ala Ala Leu Asn Ser Lys Ala Thr
	1505 1510 1515
	Phe Tyr Gly Glu Gln Val Asp Tyr Tyr Lys Ser Tyr Ile Lys Thr
	1520 1525 1530
15	Cys Leu Asp Asn Leu Ala Ser Lys Gly Lys Val Ser Lys Lys Pro
	1535 1540 1545
	Arg Glu Met Lys Gly Lys Lys Ser Lys Lys Ile Ser Leu Lys Tyr
	1550 1555 1560
	Thr Ala Ala Arg Leu His Glu Lys Gly Val Leu Leu Glu Ile Glu
20	1565 1570 1575
	Asp Leu Gln Val Asn Gln Phe Lys Asn Val Ile Phe Glu Ile Ser
	1580 1585 1590
	Pro Thr Glu Glu Val Gly Asp Phe Glu Val Lys Ala Lys Phe Met
	1595 1600 1605

Gly Val Gln Met Glu Thr Phe Met Leu His Tyr Gln Asp Leu Leu

1610

1615

1620

Gln Leu Gln Tyr Glu Gly Val Ala Val Met Lys Leu Phe Asp Arg

1625

1630

1635

5 Ala Lys Val Asn Val Asn Leu Leu Ile Phe Leu Leu Asn Lys Lys

1640

1645

1650

Phe Tyr Gly Lys

1655

10

<210> 26

<211> 627

<212> PRT

<213> Homo sapiens

15 <220>

<221> L-plastin (Lymphocyte cytosolic protein 1)

<222> (1)..(627)

<223> Accession No. as of 09 Dec 2002: P13796

20 <400> 26

Met Ala Arg Gly Ser Val Ser Asp Glu Glu Met Met Glu Leu Arg Glu

1

5

10

15

Ala Phe Ala Lys Val Asp Thr Asp Gly Asn Gly Tyr Ile Ser Phe Asn

	20	25	30
	Glu Leu Asn Asp Leu Phe Lys Ala Ala Cys Leu Pro Leu Pro Gly Tyr		
	35	40	45
	Arg Val Arg Glu Ile Thr Glu Asn Leu Met Ala Thr Gly Asp Leu Asp		
5	50	55	60
	Gln Asp Gly Arg Ile Ser Phe Asp Glu Phe Ile Lys Ile Phe His Gly		
	65	70	75 80
	Leu Lys Ser Thr Asp Val Ala Lys Thr Phe Arg Lys Ala Ile Asn Lys		
	85	90	95
10	Lys Glu Gly Ile Cys Ala Ile Gly Gly Thr Ser Glu Gln Ser Ser Val		
	100	105	110
	Gly Thr Gln His Ser Tyr Ser Glu Glu Glu Lys Tyr Ala Phe Val Asn		
	115	120	125
	Trp Ile Asn Lys Ala Leu Glu Asn Asp Pro Asp Cys Arg His Val Ile		
15	130	135	140
	Pro Met Asn Pro Asn Thr Asn Asp Leu Phe Asn Ala Val Gly Asp Gly		
	145	150	155 160
	Ile Val Leu Cys Lys Met Ile Asn Leu Ser Val Pro Asp Thr Ile Asp		
	165	170	175
20	Glu Arg Thr Ile Asn Lys Lys Lys Leu Thr Pro Phe Thr Ile Gln Glu		
	180	185	190
	Asn Leu Asn Leu Ala Leu Asn Ser Ala Ser Ala Ile Gly Cys His Val		
	195	200	205
	Val Asn Ile Gly Ala Glu Asp Leu Lys Glu Gly Lys Pro Tyr Leu Val		



210	215	220	
Leu Gly Leu Leu Trp Gln Val Ile Lys Ile Gly Leu Phe Ala Asp Ile			
225	230	235	240
Glu Leu Ser Arg Asn Glu Ala Leu Ile Ala Leu Leu Arg Glu Gly Glu			
5	245	250	255
Ser Leu Glu Asp Leu Met Lys Leu Ser Pro Glu Glu Leu Leu Leu Arg			
	260	265	270
Trp Ala Asn Tyr His Leu Glu Asn Ala Gly Cys Asn Lys Ile Gly Asn			
	275	280	285
10	Phe Ser Thr Asp Ile Lys Asp Ser Lys Ala Tyr Tyr His Leu Leu Glu		
	290	295	300
Gln Val Ala Pro Lys Gly Asp Glu Glu Gly Val Pro Ala Val Val Ile			
305	310	315	320
Asp Met Ser Gly Leu Arg Glu Lys Asp Asp Ile Gln Arg Ala Glu Cys			
15	325	330	335
Met Leu Gln Gln Ala Glu Arg Leu Gly Cys Arg Gln Phe Val Thr Ala			
	340	345	350
Thr Asp Val Val Arg Gly Asn Pro Lys Leu Asn Leu Ala Phe Ile Ala			
	355	360	365
20	Asn Leu Phe Asn Arg Tyr Pro Ala Leu His Lys Pro Glu Asn Gln Asp		
	370	375	380
Ile Asp Trp Gly Ala Leu Glu Gly Glu Thr Arg Glu Glu Arg Thr Phe			
385	390	395	400
Arg Asn Trp Met Asn Ser Leu Gly Val Asn Pro Arg Val Asn His Leu			

	405	410	415
	Tyr Ser Asp Leu Ser Asp Ala Leu Val Ile Phe Gln Leu Tyr Glu Lys		
	420	425	430
	Ile Lys Val Pro Val Asp Trp Asn Arg Val Asn Lys Pro Pro Tyr Pro		
5	435	440	445
	Lys Leu Gly Gly Asn Met Lys Lys Leu Glu Asn Cys Asn Tyr Ala Val		
	450	455	460
	Glu Leu Gly Lys Asn Gln Ala Lys Phe Ser Leu Val Gly Ile Gly Gly		
	465	470	475 480
10	Gln Asp Leu Asn Glu Gly Asn Arg Thr Leu Thr Leu Ala Leu Ile Trp		
	485	490	495
	Gln Leu Met Arg Arg Tyr Thr Leu Asn Ile Leu Glu Glu Ile Gly Gly		
	500	505	510
	Gly Gln Lys Val Asn Asp Asp Ile Ile Val Asn Trp Val Asn Glu Thr		
15	515	520	525
	Leu Arg Glu Ala Glu Lys Ser Ser Ser Ile Ser Ser Phe Lys Asp Pro		
	530	535	540
	Lys Ile Ser Thr Ser Leu Pro Val Leu Asp Leu Ile Asp Ala Ile Gln		
	545	550	555 560
20	Pro Gly Ser Ile Asn Tyr Asp Leu Leu Lys Thr Glu Asn Leu Asn Asp		
	565	570	575
	Asp Glu Lys Leu Asn Asn Ala Lys Tyr Ala Ile Ser Met Ala Arg Lys		
	580	585	590
	Ile Gly Ala Arg Val Tyr Ala Leu Pro Glu Asp Leu Val Glu Val Asn		

595

600

605

Pro Lys Met Val Met Thr Val Phe Ala Cys Leu Met Gly Lys Gly Met

610

615

620

Lys Arg Val

5 625

<210> 27

<211> 216

10 <212> PRT

<213> Homo sapiens

<220>

<221> GTP-binding nuclear protein RAN

<222> (1)..(216)

15 <223> Accession No. as of 09 Dec 2002: P17080

<400> 27

Met Ala Ala Gln Gly Glu Pro Gln Val Gln Phe Lys Leu Val Leu Val

1

5

10

15

20 Gly Asp Gly Gly Thr Gly Lys Thr Thr Phe Val Lys Arg His Leu Thr

20

25

30

Gly Glu Phe Glu Lys Lys Tyr Val Ala Thr Leu Gly Val Glu Val His

35

40

45

Pro Leu Val Phe His Thr Asn Arg Gly Pro Ile Lys Phe Asn Val Trp



<211> 463

<212> PRT

<213> Homo sapiens

<220>

5 <221> Heterogeneous nuclear ribonucleoprotein K

<222> (1)..(463)

<223> Accession No. as of 09 Dec 2002: Q07244

<400> 28

10 Met Glu Thr Glu Gln Pro Glu Glu Thr Phe Pro Asn Thr Glu Thr Asn

1 5 10 15

Gly Glu Phe Gly Lys Arg Pro Ala Glu Asp Met Glu Glu Glu Gln Ala

20 25 30

Phe Lys Arg Ser Arg Asn Thr Asp Glu Met Val Glu Leu Arg Ile Leu

15 35 40 45

Leu Gln Ser Lys Asn Ala Gly Ala Val Ile Gly Lys Gly Gly Lys Asn

50 55 60

Ile Lys Ala Leu Arg Thr Asp Tyr Asn Ala Ser Val Ser Val Pro Asp

65 70 75 80

20 Ser Ser Gly Pro Glu Arg Ile Leu Ser Ile Ser Ala Asp Ile Glu Thr

85 90 95

Ile Gly Glu Ile Leu Lys Lys Ile Ile Pro Thr Leu Glu Glu Gly Leu

100 105 110

Gln Leu Pro Ser Pro Thr Ala Thr Ser Gln Leu Pro Leu Glu Ser Asp

	115	120	125	
	Ala Val Glu Cys Leu Asn Tyr Gln His Tyr Lys Gly Ser Asp Phe Asp			
	130	135	140	
	Cys Glu Leu Arg Leu Leu Ile His Gln Ser Leu Ala Gly Gly Ile Ile			
5	145	150	155	160
	Gly Val Lys Gly Ala Lys Ile Lys Glu Leu Arg Glu Asn Thr Gln Thr			
	165	170	175	
	Thr Ile Lys Leu Phe Gln Glu Cys Cys Pro His Ser Thr Asp Arg Val			
	180	185	190	
10	Val Leu Ile Gly Gly Lys Pro Asp Arg Val Val Glu Cys Ile Lys Ile			
	195	200	205	
	Ile Leu Asp Leu Ile Ser Glu Ser Pro Ile Lys Gly Arg Ala Gln Pro			
	210	215	220	
	Tyr Asp Pro Asn Phe Tyr Asp Glu Thr Tyr Asp Tyr Gly Gly Phe Thr			
15	225	230	235	240
	Met Met Phe Asp Asp Arg Arg Gly Arg Pro Val Gly Phe Pro Met Arg			
	245	250	255	
	Gly Arg Gly Gly Phe Asp Arg Met Pro Pro Gly Arg Gly Gly Arg Pro			
	260	265	270	
20	Met Pro Pro Ser Arg Arg Asp Tyr Asp Asp Met Ser Pro Arg Arg Gly			
	275	280	285	
	Pro Pro Pro Pro Pro Pro Gly Arg Gly Gly Arg Gly Gly Ser Arg Ala			
	290	295	300	
	Arg Asn Leu Pro Leu Pro Pro Pro Pro Pro Pro Arg Gly Gly Asp Leu			

<212> PRT

<213> Homo sapiens

<220>

<221> Translationally controlled tumor protein (TCTP)

<222> (1)..(172)

5 <223> Accession No. as of 09 Dec 2002: P13693

<400> 29

Met Ile Ile Tyr Arg Asp Leu Ile Ser His Asp Glu Met Phe Ser Asp  
1 5 10 15  
10 Ile Tyr Lys Ile Arg Glu Ile Ala Asp Gly Leu Cys Leu Glu Val Glu  
20 25 30  
Gly Lys Met Val Ser Arg Thr Glu Gly Asn Ile Asp Asp Ser Leu Ile  
35 40 45  
Gly Gly Asn Ala Ser Ala Glu Gly Pro Glu Gly Glu Gly Thr Glu Ser  
15 50 55 60  
Thr Val Ile Thr Gly Val Asp Ile Val Met Asn His His Leu Gln Glu  
65 70 75 80  
Thr Ser Phe Thr Lys Glu Ala Tyr Lys Lys Tyr Ile Lys Asp Tyr Met  
85 90 95  
20 Lys Ser Ile Lys Gly Lys Leu Glu Glu Gln Arg Pro Glu Arg Val Lys  
100 105 110  
Pro Phe Met Thr Gly Ala Ala Glu Gln Ile Lys His Ile Leu Ala Asn  
115 120 125  
Phe Lys Asn Tyr Gln Phe Phe Ile Gly Glu Asn Met Asn Pro Asp Gly



130 135 140  
Met Val Ala Leu Leu Asp Tyr Arg Glu Asp Gly Val Thr Pro Tyr Met  
145 150 155 160  
Ile Phe Phe Lys Asp Gly Leu Glu Met Glu Lys Cys  
5 165 170

<210> 30  
<211> 284  
10 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Tropomyosin 1 alpha chain  
<222> (1)..(284)  
15 <223> Accession No. as of 06 Dec 2002: P09493  
<400> 30

Met Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu  
1 5 10 15  
20 Asn Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala  
20 25 30  
Glu Asp Arg Ser Lys Gln Leu Glu Asp Glu Leu Val Ser Leu Gln Lys  
35 40 45  
Lys Leu Lys Gly Thr Glu Asp Glu Leu Asp Lys Tyr Ser Glu Ala Leu

	50		55		60											
	Lys	Asp	Ala	Gln	Glu	Lys	Leu	Glu	Leu	Ala	Glu	Lys	Lys	Ala	Thr	Asp
	65					70					75					80
	Ala	Glu	Ala	Asp	Val	Ala	Ser	Leu	Asn	Arg	Arg	Ile	Gln	Leu	Val	Glu
5						85					90					95
	Glu	Glu	Leu	Asp	Arg	Ala	Gln	Glu	Arg	Leu	Ala	Thr	Ala	Leu	Gln	Lys
						100					105					110
	Leu	Glu	Glu	Ala	Glu	Lys	Ala	Ala	Asp	Glu	Ser	Glu	Arg	Gly	Met	Lys
						115					120					125
10	Val	Ile	Glu	Ser	Arg	Ala	Gln	Lys	Asp	Glu	Glu	Lys	Met	Glu	Ile	Gln
						130					135					140
	Glu	Ile	Gln	Leu	Lys	Glu	Ala	Lys	His	Ile	Ala	Glu	Asp	Ala	Asp	Arg
	145					150					155					160
	Lys	Tyr	Glu	Glu	Val	Ala	Arg	Lys	Leu	Val	Ile	Ile	Glu	Ser	Asp	Leu
15						165					170					175
	Glu	Arg	Ala	Glu	Glu	Arg	Ala	Glu	Leu	Ser	Glu	Gly	Lys	Cys	Ala	Glu
						180					185					190
	Leu	Glu	Glu	Glu	Leu	Lys	Thr	Val	Thr	Asn	Asn	Leu	Lys	Ser	Leu	Glu
						195					200					205
20	Ala	Gln	Ala	Glu	Lys	Tyr	Ser	Gln	Lys	Glu	Asp	Arg	Tyr	Glu	Glu	Glu
						210					215					220
	Ile	Lys	Val	Leu	Ser	Asp	Lys	Leu	Lys	Glu	Ala	Glu	Thr	Arg	Ala	Glu
	225					230					235					240
	Phe	Ala	Glu	Arg	Ser	Val	Thr	Lys	Leu	Glu	Lys	Ser	Ile	Asp	Asp	Leu

245 250 255  
Glu Asp Glu Leu Tyr Ala Gln Lys Leu Lys Tyr Lys Ala Ile Ser Glu  
260 265 270  
Glu Leu Asp His Ala Leu Asn Asp Met Thr Ser Ile  
5 275 280

<210> 31  
<211> 482  
10 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Thymidine phosphorylase precursor  
<222> (1)..(482)  
15 <223> Accession No. as of 09 Dec 2002: P19971  
<400> 31

Met Ala Ala Leu Met Thr Pro Gly Thr Gly Ala Pro Pro Ala Pro Gly  
1 5 10 15  
20 Asp Phe Ser Gly Glu Gly Ser Gln Gly Leu Pro Asp Pro Ser Pro Glu  
20 25 30  
Pro Lys Gln Leu Pro Glu Leu Ile Arg Met Lys Arg Asp Gly Gly Arg  
35 40 45  
Leu Ser Glu Ala Asp Ile Arg Gly Phe Val Ala Ala Val Val Asn Gly

	50		55		60											
	Ser	Ala	Gln	Gly	Ala	Gln	Ile	Gly	Ala	Met	Leu	Met	Ala	Ile	Arg	Leu
	65					70					75				80	
	Arg	Gly	Met	Asp	Leu	Glu	Glu	Thr	Ser	Val	Leu	Thr	Gln	Ala	Leu	Ala
5						85					90				95	
	Gln	Ser	Gly	Gln	Gln	Leu	Glu	Trp	Pro	Glu	Ala	Trp	Arg	Gln	Gln	Leu
						100					105				110	
	Val	Asp	Lys	His	Ser	Thr	Gly	Gly	Val	Gly	Asp	Lys	Val	Ser	Leu	Val
						115					120				125	
10	Leu	Ala	Pro	Ala	Leu	Ala	Ala	Cys	Gly	Cys	Lys	Val	Pro	Met	Ile	Ser
						130					135				140	
	Gly	Arg	Gly	Leu	Gly	His	Thr	Gly	Gly	Thr	Leu	Asp	Lys	Leu	Glu	Ser
	145					150					155				160	
	Ile	Pro	Gly	Phe	Asn	Val	Ile	Gln	Ser	Pro	Glu	Gln	Met	Gln	Val	Leu
15						165					170				175	
	Leu	Asp	Gln	Ala	Gly	Cys	Cys	Ile	Val	Gly	Gln	Ser	Glu	Gln	Leu	Val
						180					185				190	
	Pro	Ala	Asp	Gly	Ile	Leu	Tyr	Ala	Ala	Arg	Asp	Val	Thr	Ala	Thr	Val
						195					200				205	
20	Asp	Ser	Leu	Pro	Leu	Ile	Thr	Ala	Ser	Ile	Leu	Ser	Lys	Lys	Leu	Val
						210					215				220	
	Glu	Gly	Leu	Ser	Ala	Leu	Val	Val	Asp	Val	Lys	Phe	Gly	Gly	Ala	Ala
	225					230					235				240	
	Val	Phe	Pro	Asn	Gln	Glu	Gln	Ala	Arg	Glu	Leu	Ala	Lys	Thr	Leu	Val

	245	250	255
	Gly Val Gly Ala Ser Leu Gly Leu Arg Val Ala Ala Ala Leu Thr Ala		
	260	265	270
	Met Asp Lys Pro Leu Gly Arg Cys Val Gly His Ala Leu Glu Val Glu		
5	275	280	285
	Glu Ala Leu Leu Cys Met Asp Gly Ala Gly Pro Pro Asp Leu Arg Asp		
	290	295	300
	Leu Val Thr Thr Leu Gly Gly Ala Leu Leu Trp Leu Ser Gly His Ala		
	305	310	315 320
10	Gly Thr Gln Ala Gln Gly Ala Ala Arg Val Ala Ala Ala Leu Asp Asp		
	325	330	335
	Gly Ser Ala Leu Gly Arg Phe Glu Arg Met Leu Ala Ala Gln Gly Val		
	340	345	350
	Asp Pro Gly Leu Ala Arg Ala Leu Cys Ser Gly Ser Pro Ala Glu Arg		
15	355	360	365
	Arg Gln Leu Leu Pro Arg Ala Arg Glu Gln Glu Glu Leu Leu Ala Pro		
	370	375	380
	Ala Asp Gly Thr Val Glu Leu Val Arg Ala Leu Pro Leu Ala Leu Val		
	385	390	395 400
20	Leu His Glu Leu Gly Ala Gly Arg Ser Arg Ala Gly Glu Pro Leu Arg		
	405	410	415
	Leu Gly Val Gly Ala Glu Leu Leu Val Asp Val Gly Gln Arg Leu Arg		
	420	425	430
	Arg Gly Thr Pro Trp Leu Arg Val His Arg Asp Gly Pro Ala Leu Ser		

435 440 445  
Gly Pro Gln Ser Arg Ala Leu Gln Glu Ala Leu Val Leu Ser Asp Arg  
450 455 460  
Ala Pro Phe Ala Ala Pro Leu Pro Phe Ala Glu Leu Val Leu Pro Pro  
5 465 470 475 480  
Gln Gln

10 <210> 32

<211> 488

<212> PRT

<213> Homo sapiens

<220>

15 <221> Cytosol aminopeptidase

<222> (1)..(488)

<223> Accession No. as of 09 Dec 2002: P28838

<400> 32

20 Met Thr Lys Gly Leu Val Leu Gly Ile Tyr Ser Lys Glu Lys Glu Asp

1

5

10

15

Asp Val Pro Gln Phe Thr Ser Ala Gly Glu Asn Phe Asp Lys Leu Leu

20

25

30

Ala Gly Lys Leu Arg Glu Thr Leu Asn Ile Ser Gly Pro Pro Leu Lys

[illegible]

225	230	235	240
Ala Asn Glu Pro Pro Leu Val Phe Val Gly Lys Gly Ile Thr Phe Asp			
	245	250	255
Ser Gly Gly Ile Ser Ile Lys Ala Ser Ala Asn Met Asp Leu Met Arg			
5	260	265	270
Ala Asp Met Gly Gly Ala Ala Thr Ile Cys Ser Ala Ile Val Ser Ala			
	275	280	285
Ala Lys Leu Asn Leu Pro Ile Asn Ile Ile Gly Leu Ala Pro Leu Cys			
	290	295	300
10	Glu Asn Met Pro Ser Gly Lys Ala Asn Lys Pro Gly Asp Val Val Arg		
	305	310	315 320
Ala Lys Asn Gly Lys Thr Ile Gln Val Asp Asn Thr Asp Ala Glu Gly			
	325	330	335
Arg Leu Ile Leu Ala Asp Ala Leu Cys Tyr Ala His Thr Phe Asn Pro			
15	340	345	350
Lys Val Ile Leu Asn Ala Ala Thr Leu Thr Gly Ala Met Asp Val Ala			
	355	360	365
Leu Gly Ser Gly Ala Thr Gly Val Phe Thr Asn Ser Ser Trp Leu Trp			
	370	375	380
20	Asn Lys Leu Phe Glu Ala Ser Ile Glu Thr Gly Asp Arg Val Trp Arg		
	385	390	395 400
Met Pro Leu Phe Glu His Tyr Thr Arg Gln Val Val Asp Cys Gln Leu			
	405	410	415
Ala Asp Val Asn Asn Ile Gly Lys Tyr Arg Ser Ala Gly Ala Cys Thr			



420 425 430  
Ala Ala Ala Phe Leu Lys Glu Phe Val Thr His Pro Lys Trp Ala His  
435 440 445  
Leu Asp Ile Ala Gly Val Met Thr Asn Lys Asp Glu Val Pro Tyr Leu  
5 450 455 460  
Arg Lys Gly Met Thr Gly Arg Pro Thr Arg Thr Leu Ile Glu Phe Leu  
465 470 475 480  
Leu Arg Phe Ser Gln Asp Asn Ala  
485

10

<210> 33  
<211> 400  
<212> PRT  
15 <213> Homo sapiens  
<220>  
<221> Keratin, type I cytoskeletal 19  
<222> (1)..(400)  
<223> Accession No. as of 09 Dec 2002 : P08727

20

<400> 33

Met Thr Ser Tyr Ser Tyr Arg Gln Ser Ser Ala Thr Ser Ser Phe Gly

1

5

10

15

Gly Leu Gly Gly Gly Ser Val Arg Phe Gly Pro Gly Val Ala Phe Arg  
20 25 30  
Ala Pro Ser Ile His Gly Gly Ser Gly Gly Arg Gly Val Ser Val Ser  
35 40 45  
5 Ser Ala Arg Phe Val Ser Ser Ser Ser Ser Gly Gly Tyr Gly Gly Gly  
50 55 60  
Tyr Gly Gly Val Leu Thr Ala Ser Asp Gly Leu Leu Ala Gly Asn Glu  
65 70 75 80  
Lys Leu Thr Met Gln Asn Leu Asn Asp Arg Leu Ala Ser Tyr Leu Asp  
10 85 90 95  
Lys Val Arg Ala Leu Glu Ala Ala Asn Gly Glu Leu Glu Val Lys Ile  
100 105 110  
Arg Asp Trp Tyr Gln Lys Gln Gly Pro Gly Pro Ser Arg Asp Tyr Ser  
115 120 125  
15 His Tyr Tyr Thr Thr Ile Gln Asp Leu Arg Asp Lys Ile Leu Gly Ala  
130 135 140  
Thr Ile Glu Asn Ser Arg Ile Val Leu Gln Ile Asp Asn Ala Arg Leu  
145 150 155 160  
Ala Ala Asp Asp Phe Arg Thr Lys Phe Glu Thr Glu Gln Ala Leu Arg  
20 165 170 175  
Met Ser Val Glu Ala Asp Ile Asn Gly Leu Arg Arg Val Leu Asp Glu  
180 185 190  
Leu Thr Leu Ala Arg Thr Asp Leu Glu Met Gln Ile Glu Gly Leu Lys  
195 200 205

Glu Glu Leu Ala Tyr Leu Lys Lys Asn His Glu Glu Glu Ile Ser Thr  
210 215 220  
Leu Arg Gly Gln Val Gly Gly Gln Val Ser Val Glu Val Asp Ser Ala  
225 230 235 240  
5 Pro Gly Thr Asp Leu Ala Lys Ile Leu Ser Asp Met Arg Ser Gln Tyr  
245 250 255  
Glu Val Met Ala Glu Gln Asn Arg Lys Asp Ala Glu Ala Trp Phe Thr  
260 265 270  
Ser Arg Thr Glu Glu Leu Asn Arg Glu Val Ala Gly His Thr Glu Gln  
10 275 280 285  
Leu Gln Met Ser Arg Ser Glu Val Thr Asp Leu Arg Arg Thr Leu Gln  
290 295 300  
Gly Leu Glu Ile Glu Leu Gln Ser Gln Leu Ser Met Lys Ala Ala Leu  
305 310 315 320  
15 Glu Asp Thr Leu Ala Glu Thr Glu Ala Arg Phe Gly Ala Gln Leu Ala  
325 330 335  
His Ile Gln Ala Leu Ile Ser Gly Ile Glu Ala Gln Leu Ala Asp Val  
340 345 350  
Arg Ala Asp Ser Glu Arg Gln Asn Gln Glu Tyr Gln Arg Leu Met Asp  
20 355 360 365  
Ile Lys Ser Arg Leu Glu Gln Glu Ile Ala Thr Tyr Arg Ser Leu Leu  
370 375 380  
Glu Gly Gln Glu Asp His Tyr Asn Asn Leu Ser Ala Ser Lys Val Leu  
385 390 395 400

<210> 34  
<211> 325  
5 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Alcohol dehydrogenase [NADP+]  
<222> (1)..(325)  
10 <223> Accession No. as of 09 Dec 2002: P14550  
<400> 34

Met Ala Ala Ser Cys Val Leu Leu His Thr Gly Gln Lys Met Pro Leu  
1 5 10 15  
15 Ile Gly Leu Gly Thr Trp Lys Ser Glu Pro Gly Gln Val Lys Ala Ala  
20 25 30  
Val Lys Tyr Ala Leu Ser Val Gly Tyr Arg His Ile Asp Cys Ala Ala  
35 40 45  
Ile Tyr Gly Asn Glu Pro Glu Ile Gly Glu Ala Leu Lys Glu Asp Val  
20 50 55 60  
Gly Pro Gly Lys Ala Val Pro Arg Glu Glu Leu Phe Val Thr Ser Lys  
65 70 75 80  
Leu Trp Asn Thr Lys His His Pro Glu Asp Val Glu Pro Ala Leu Arg  
85 90 95

Lys Thr Leu Ala Asp Leu Gln Leu Glu Tyr Leu Asp Leu Tyr Leu Met  
100 105 110

His Trp Pro Tyr Ala Phe Glu Arg Gly Asp Asn Pro Phe Pro Lys Asn  
115 120 125

5 Ala Asp Gly Thr Ile Cys Tyr Asp Ser Thr His Tyr Lys Glu Thr Trp  
130 135 140

Lys Ala Leu Glu Ala Leu Val Ala Lys Gly Leu Val Gln Ala Leu Gly  
145 150 155 160

Leu Ser Asn Phe Asn Ser Arg Gln Ile Asp Asp Ile Leu Ser Val Ala  
10 165 170 175

Ser Val Arg Pro Ala Val Leu Gln Val Glu Cys His Pro Tyr Leu Ala  
180 185 190

Gln Asn Glu Leu Ile Ala His Cys Gln Ala Arg Gly Leu Glu Val Thr  
195 200 205

15 Ala Tyr Ser Pro Leu Gly Ser Ser Asp Arg Ala Trp Arg Asp Pro Asp  
210 215 220

Glu Pro Val Leu Leu Glu Glu Pro Val Val Leu Ala Leu Ala Glu Lys  
225 230 235 240

Tyr Gly Arg Ser Pro Ala Gln Ile Leu Leu Arg Trp Gln Val Gln Arg  
20 245 250 255

Lys Val Ile Cys Ile Pro Lys Ser Ile Thr Pro Ser Arg Ile Leu Gln  
260 265 270

Asn Ile Lys Val Phe Asp Phe Thr Phe Ser Pro Glu Glu Met Lys Gln  
275 280 285

Leu Asn Ala Leu Asn Lys Asn Trp Arg Tyr Ile Val Pro Met Leu Thr

290

295

300

Val Asp Gly Lys Arg Val Pro Arg Asp Ala Gly His Pro Leu Tyr Pro

305

310

315

320

5 Phe Asn Asp Pro Tyr

325

<210> 35

10 <211> 270

<212> PRT

<213> Homo sapiens

<220>

<221> Elastase IIIA precursor

15 <222> (1)..(270)

<223> Accession No. as of 09 Dec 2002: P09093

<400> 35

Met Met Leu Arg Leu Leu Ser Ser Leu Leu Leu Val Ala Val Ala Ser

20 1

5

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15

Gly Tyr Gly Pro Pro Ser Ser His Ser Ser Ser Arg Val Val His Gly

20

25

30

Glu Asp Ala Val Pro Tyr Ser Trp Pro Trp Gln Val Ser Leu Gln Tyr

35

40

45

Glu Lys Ser Gly Ser Phe Tyr His Thr Cys Gly Gly Ser Leu Ile Ala  
50 55 60  
Pro Asp Trp Val Val Thr Ala Gly His Cys Ile Ser Arg Asp Leu Thr  
65 70 75 80  
5 Tyr Gln Val Val Leu Gly Glu Tyr Asn Leu Ala Val Lys Glu Gly Pro  
85 90 95  
Glu Gln Val Ile Pro Ile Asn Ser Glu Glu Leu Phe Val His Pro Leu  
100 105 110  
Trp Asn Arg Ser Cys Val Ala Cys Gly Asn Asp Ile Ala Leu Ile Lys  
10 115 120 125  
Leu Ser Arg Ser Ala Gln Leu Gly Asp Ala Val Gln Leu Ala Ser Leu  
130 135 140  
Pro Pro Ala Gly Asp Ile Leu Pro Asn Lys Thr Pro Cys Tyr Ile Thr  
145 150 155 160  
15 Gly Trp Gly Arg Leu Tyr Thr Asn Gly Pro Leu Pro Asp Lys Leu Gln  
165 170 175  
Gln Ala Arg Leu Pro Val Val Asp Tyr Lys His Cys Ser Arg Trp Asn  
180 185 190  
Trp Trp Gly Ser Thr Val Lys Lys Thr Met Val Cys Ala Gly Gly Tyr  
20 195 200 205  
Ile Arg Ser Gly Cys Asn Gly Asp Ser Gly Gly Pro Leu Asn Cys Pro  
210 215 220  
Thr Glu Asp Gly Gly Trp Gln Val His Gly Val Thr Ser Phe Val Ser  
225 230 235 240

Gly Phe Gly Cys Asn Phe Ile Trp Lys Pro Thr Val Phe Thr Arg Val

245

250

255

Ser Ala Phe Ile Asp Trp Ile Glu Glu Thr Ile Ala Ser His

260

265

270

5

<210> 36

<211> 509

<212> . PRT

10 <213> Homo sapiens

<220>

<221> Dihydrolipoamide dehydrogenase, mitochondrial precursor

<222> (1)..(509)

<223> Accession No. as of 09 Dec 2002: P09622

15 <400> 36

Met Gln Ser Trp Ser Arg Val Tyr Cys Ser Leu Ala Lys Arg Gly His

1

5

10

15

Phe Asn Arg Ile Ser His Gly Leu Gln Gly Leu Ser Ala Val Pro Leu

20

20

25

30

Arg Thr Tyr Ala Asp Gln Pro Ile Asp Ala Asp Val Thr Val Ile Gly

35

40

45

Ser Gly Pro Gly Gly Tyr Val Ala Ala Ile Lys Ala Ala Gln Leu Gly

50

55

60



Phe Lys Thr Val Cys Ile Glu Lys Asn Glu Thr Leu Gly Gly Thr Cys  
65                      70                      75                      80  
Leu Asn Val Gly Cys Ile Pro Ser Lys Ala Leu Leu Asn Asn Ser His  
                         85                      90                      95  
5 Tyr Tyr His Met Ala His Gly Thr Asp Phe Ala Ser Arg Gly Ile Glu  
                         100                      105                      110  
Met Ser Glu Val Arg Leu Asn Leu Asp Lys Met Met Glu Gln Lys Ser  
                         115                      120                      125  
Thr Ala Val Lys Ala Leu Thr Gly Gly Ile Ala His Leu Phe Lys Gln  
10           130                      135                      140  
Asn Lys Val Val His Val Asn Gly Tyr Gly Lys Ile Thr Gly Lys Asn  
145                      150                      155                      160  
Gln Val Thr Ala Thr Lys Ala Asp Gly Gly Thr Gln Val Ile Asp Thr  
                         165                      170                      175  
15 Lys Asn Ile Leu Ile Ala Thr Gly Ser Glu Val Thr Pro Phe Pro Gly  
                         180                      185                      190  
Ile Thr Ile Asp Glu Asp Thr Ile Val Ser Ser Thr Gly Ala Leu Ser  
                         195                      200                      205  
Leu Lys Lys Val Pro Glu Lys Met Val Val Ile Gly Ala Gly Val Ile  
20           210                      215                      220  
Gly Val Glu Leu Gly Ser Val Trp Gln Arg Leu Gly Ala Asp Val Thr  
225                      230                      235                      240  
Ala Val Glu Phe Leu Gly His Val Gly Gly Val Gly Ile Asp Met Glu  
                         245                      250                      255

Ile Ser Lys Asn Phe Gln Arg Ile Leu Gln Lys Gln Gly Phe Lys Phe  
260 265 270  
Lys Leu Asn Thr Lys Val Thr Gly Ala Thr Lys Lys Ser Asp Gly Lys  
275 280 285  
5 Ile Asp Val Ser Ile Glu Ala Ala Ser Gly Gly Lys Ala Glu Val Ile  
290 295 300  
Thr Cys Asp Val Leu Leu Val Cys Ile Gly Arg Arg Pro Phe Thr Lys  
305 310 315 320  
Asn Leu Gly Leu Glu Glu Leu Gly Ile Glu Leu Asp Pro Arg Gly Arg  
10 325 330 335  
Ile Pro Val Asn Thr Arg Phe Gln Thr Lys Ile Pro Asn Ile Tyr Ala  
340 345 350  
Ile Gly Asp Val Val Ala Gly Pro Met Leu Ala His Lys Ala Glu Asp  
355 360 365  
15 Glu Gly Ile Ile Cys Val Glu Gly Met Ala Gly Gly Ala Val His Ile  
370 375 380  
Asp Tyr Asn Cys Val Pro Ser Val Ile Tyr Thr His Pro Glu Val Ala  
385 390 395 400  
Trp Val Gly Lys Ser Glu Glu Gln Leu Lys Glu Glu Gly Ile Glu Tyr  
20 405 410 415  
Lys Val Gly Lys Phe Pro Phe Ala Ala Asn Ser Arg Ala Lys Thr Asn  
420 425 430  
Ala Asp Thr Asp Gly Met Val Lys Ile Leu Gly Gln Lys Ser Thr Asp  
435 440 445

Arg Val Leu Gly Ala His Ile Leu Gly Pro Gly Ala Gly Glu Met Val

450

455

460

Asn Glu Ala Ala Leu Ala Leu Glu Tyr Gly Ala Ser Cys Glu Asp Ile

465

470

475

480

5 Ala Arg Val Cys His Ala His Pro Thr Leu Ser Glu Ala Phe Arg Glu

485

490

495

Ala Asn Leu Ala Ala Ser Phe Gly Lys Ser Ile Asn Phe

500

505

10

<210> 37

<211> 290

<212> PRT

<213> Homo sapiens

15 <220>

<221> Enoyl-CoA hydratase, mitochondrial precursor

<222> (1)..(290)

<223> Accession No. as of 09 Dec 2002: P30084

<400> 37

20

Met Ala Ala Leu Arg Val Leu Leu Ser Cys Ala Arg Gly Pro Leu Arg

1

5

10

15

Pro Pro Val Arg Cys Pro Ala Trp Arg Pro Phe Ala Ser Gly Ala Asn

20

25

30

Phe Glu Tyr Ile Ile Ala Glu Lys Arg Gly Lys Asn Asn Thr Val Gly  
35 40 45

Leu Ile Gln Leu Asn Arg Pro Lys Ala Leu Asn Ala Leu Cys Asp Gly  
50 55 60

5 Leu Ile Asp Glu Leu Asn Gln Ala Leu Lys Ile Phe Glu Glu Asp Pro  
65 70 75 80

Ala Val Gly Ala Ile Val Leu Thr Gly Gly Asp Lys Ala Phe Ala Ala  
85 90 95

Gly Ala Asp Ile Lys Glu Met Gln Asn Leu Ser Phe Gln Asp Cys Tyr  
10 100 105 110

Ser Ser Lys Phe Leu Lys His Trp Asp His Leu Thr Gln Val Lys Lys  
115 120 125

Pro Val Ile Ala Ala Val Asn Gly Tyr Ala Phe Gly Gly Gly Cys Glu  
130 135 140

15 Leu Ala Met Met Cys Asp Ile Ile Tyr Ala Gly Glu Lys Ala Gln Phe  
145 150 155 160

Ala Gln Pro Glu Ile Leu Ile Gly Thr Ile Pro Gly Ala Gly Gly Thr  
165 170 175

Gln Arg Leu Thr Arg Ala Val Gly Lys Ser Leu Ala Met Glu Met Val  
20 180 185 190

Leu Thr Gly Asp Arg Ile Ser Ala Gln Asp Ala Lys Gln Ala Gly Leu  
195 200 205

Val Ser Lys Ile Cys Pro Val Glu Thr Leu Val Glu Glu Ala Ile Gln  
210 215 220

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Cys Ala Glu Lys Ile Ala Ser Asn Ser Lys Ile Val Val Ala Met Ala

225                      230                      235                      240

Lys Glu Ser Val Asn Ala Ala Phe Glu Met Thr Leu Thr Glu Gly Ser

245                      250                      255

5 Lys Leu Glu Lys Lys Leu Phe Tyr Ser Thr Phe Ala Thr Asp Asp Arg

260                      265                      270

Lys Glu Gly Met Thr Ala Phe Val Glu Lys Arg Lys Ala Asn Phe Lys

275                      280                      285

Asp Gln

10              290

<210> 38

<211> 160

15 <212> PRT

<213> Homo sapiens

<220>

<221> Heat-shock 20 kDa like-protein p20

<222> (1)..(160)

20 <223> Accession No. as of 09 Dec 2002: O14558

<400> 38

Met Glu Ile Pro Val Pro Val Gln Pro Ser Trp Leu Arg Arg Ala Ser

1                      5                      10                      15

Ala Pro Leu Pro Gly Leu Ser Ala Pro Gly Arg Leu Phe Asp Gln Arg  
20 25 30  
Phe Gly Glu Gly Leu Leu Glu Ala Glu Leu Ala Ala Leu Cys Pro Thr  
35 40 45  
5 Thr Leu Ala Pro Tyr Tyr Leu Arg Ala Pro Ser Val Ala Leu Pro Val  
50 55 60  
Ala Gln Val Pro Thr Asp Pro Gly His Phe Ser Val Leu Leu Asp Val  
65 70 75 80  
Lys His Phe Ser Pro Glu Glu Ile Ala Val Lys Val Val Gly Glu His  
10 85 90 95  
Val Glu Val His Ala Arg His Glu Glu Arg Pro Asp Glu His Gly Phe  
100 105 110  
Val Ala Arg Glu Phe His Arg Arg Tyr Arg Leu Pro Pro Gly Val Asp  
115 120 125  
15 Pro Ala Ala Val Thr Ser Ala Leu Ser Pro Glu Gly Val Leu Ser Ile  
130 135 140  
Gln Ala Ala Pro Ala Ser Ala Gln Ala Pro Pro Pro Ala Ala Ala Lys  
145 150 155 160

20

<210> 39

<211> 151

<212> PRT

<213> Homo sapiens

<220>

<221> Myosin light chain alkali, non-muscle isoform

<222> (1)..(151)

<223> Accession No. as of 09 Dec 2002: P16475

5 <400> 39

Met Cys Asp Phe Thr Glu Asp Gln Thr Ala Glu Phe Lys Glu Ala Phe  
1 5 10 15  
Gln Leu Phe Asp Arg Thr Gly Asp Gly Lys Ile Leu Tyr Ser Gln Cys  
10 20 25 30  
Gly Asp Val Met Arg Ala Leu Gly Gln Asn Pro Thr Asn Ala Glu Val  
35 40 45  
Leu Lys Val Leu Gly Asn Pro Lys Ser Asp Glu Met Asn Val Lys Val  
50 55 60  
15 Leu Asp Phe Glu His Phe Leu Pro Met Leu Gln Thr Val Ala Lys Asn  
65 70 75 80  
Lys Asp Gln Gly Thr Tyr Glu Asp Tyr Val Glu Gly Leu Arg Val Phe  
85 90 95  
Asp Lys Glu Gly Asn Gly Thr Val Met Gly Ala Glu Ile Arg His Val  
20 100 105 110  
Leu Val Thr Leu Gly Glu Lys Met Thr Glu Glu Glu Val Glu Met Leu  
115 120 125  
Val Ala Gly His Glu Asp Ser Asn Gly Cys Ile Asn Tyr Glu Ala Phe  
130 135 140

Val Arg His Ile Leu Ser Gly

145

150

5 <210> 40

<211> 592

<212> PRT

<213> Homo sapiens

<220>

10 <221> Calnexin precursor

<222> (1) .. (592)

<223> Accession No. as of 09 Dec 2002: P27824

<400> 40

15 Met Glu Gly Lys Trp Leu Leu Cys Met Leu Leu Val Leu Gly Thr Ala

1 5 10 15

Ile Val Glu Ala His Asp Gly His Asp Asp Asp Val Ile Asp Ile Glu

20 25 30

Asp Asp Leu Asp Asp Val Ile Glu Glu Val Glu Asp Ser Lys Pro Asp

20 35 40 45

Thr Thr Ala Pro Pro Ser Ser Pro Lys Val Thr Tyr Lys Ala Pro Val

50 55 60

Pro Thr Gly Glu Val Tyr Phe Ala Asp Ser Phe Asp Arg Gly Thr Leu

65 70 75 80



Ser Gly Trp Ile Leu Ser Lys Ala Lys Lys Asp Asp Thr Asp Asp Glu  
85 90 95  
Ile Ala Lys Tyr Asp Gly Lys Trp Glu Val Glu Glu Met Lys Glu Ser  
100 105 110  
5 Lys Leu Pro Gly Asp Lys Gly Leu Val Leu Met Ser Arg Ala Lys His  
115 120 125  
His Ala Ile Ser Ala Lys Leu Asn Lys Pro Phe Leu Phe Asp Thr Lys  
130 135 140  
Pro Leu Ile Val Gln Tyr Glu Val Asn Phe Gln Asn Gly Ile Glu Cys  
10 145 150 155 160  
Gly Gly Ala Tyr Val Lys Leu Leu Ser Lys Thr Pro Glu Leu Asn Leu  
165 170 175  
Asp Gln Phe His Asp Lys Thr Pro Tyr Thr Ile Met Phe Gly Pro Asp  
180 185 190  
15 Lys Cys Gly Glu Asp Tyr Lys Leu His Phe Ile Phe Arg His Lys Asn  
195 200 205  
Pro Lys Thr Gly Ile Tyr Glu Glu Lys His Ala Lys Arg Pro Asp Ala  
210 215 220  
Asp Leu Lys Thr Tyr Phe Thr Asp Lys Lys Thr His Leu Tyr Thr Leu  
20 225 230 235 240  
Ile Leu Asn Pro Asp Asn Ser Phe Glu Ile Leu Val Asp Gln Ser Val  
245 250 255  
Val Asn Ser Gly Asn Leu Leu Asn Asp Met Thr Pro Pro Val Asn Pro  
260 265 270

Ser Arg Glu Ile Glu Asp Pro Glu Asp Arg Lys Pro Glu Asp Trp Asp  
275 280 285

Glu Arg Pro Lys Ile Pro Asp Pro Glu Ala Val Lys Pro Asp Asp Trp  
290 295 300

5 Asp Glu Asp Ala Pro Ala Lys Ile Pro Asp Glu Glu Ala Thr Lys Pro  
305 310 315 320

Glu Gly Trp Leu Asp Asp Glu Pro Glu Tyr Val Pro Asp Pro Asp Ala  
325 330 335

Glu Lys Pro Glu Asp Trp Asp Glu Asp Met Asp Gly Glu Trp Glu Ala  
10 340 345 350

Pro Gln Ile Ala Asn Pro Arg Cys Glu Ser Ala Pro Gly Cys Gly Val  
355 360 365

Trp Gln Arg Pro Val Ile Asp Asn Pro Asn Tyr Lys Gly Lys Trp Lys  
370 375 380

15 Pro Pro Met Ile Asp Asn Pro Ser Tyr Gln Gly Ile Trp Lys Pro Arg  
385 390 395 400

Lys Ile Pro Asn Pro Asp Phe Phe Glu Asp Leu Glu Pro Phe Arg Met  
405 410 415

Thr Pro Phe Ser Ala Ile Gly Leu Glu Leu Trp Ser Met Thr Ser Asp  
20 420 425 430

Ile Phe Phe Asp Asn Phe Ile Ile Cys Ala Asp Arg Arg Ile Val Asp  
435 440 445

Asp Trp Ala Asn Asp Gly Trp Gly Leu Lys Lys Ala Ala Asp Gly Ala  
450 455 460

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Ala Glu Pro Gly Val Val Gly Gln Met Ile Glu Ala Ala Glu Glu Arg  
465 470 475 480  
Pro Trp Leu Trp Val Val Tyr Ile Leu Thr Val Ala Leu Pro Val Phe  
485 490 495  
5 Leu Val Ile Leu Phe Cys Cys Ser Gly Lys Lys Gln Thr Ser Gly Met  
500 505 510  
Glu Tyr Lys Lys Thr Asp Ala Pro Gln Pro Asp Val Lys Glu Glu Glu  
515 520 525  
Glu Glu Lys Glu Glu Glu Lys Asp Lys Gly Asp Glu Glu Glu Glu Gly  
10 530 535 540  
Glu Glu Lys Leu Glu Glu Lys Gln Lys Ser Asp Ala Glu Glu Asp Gly  
545 550 555 560  
Gly Thr Val Ser Gln Glu Glu Glu Asp Arg Lys Pro Lys Ala Glu Glu  
565 570 575  
15 Asp Glu Ile Leu Asn Arg Ser Pro Arg Asn Arg Lys Pro Arg Arg Glu  
580 585 590

<210> 41

20 <211> 282

<212> PRT

<213> Homo sapiens

<220>

<221> Complement component 1

<222> (1)..(282)

<223> Accession No. as of 09 Dec 2002: Q07021

<400> 41

5 Met Leu Pro Leu Leu Arg Cys Val Pro Arg Val Leu Gly Ser Ser Val  
1 5 10 15  
Ala Gly Leu Arg Ala Ala Ala Pro Ala Ser Pro Phe Arg Gln Leu Leu  
20 25 30  
Gln Pro Ala Pro Arg Leu Cys Thr Arg Pro Phe Gly Leu Leu Ser Val  
10 35 40 45  
Arg Ala Gly Ser Glu Arg Arg Pro Gly Leu Leu Arg Pro Arg Gly Pro  
50 55 60  
Cys Ala Cys Gly Cys Gly Cys Gly Ser Leu His Thr Asp Gly Asp Lys  
65 70 75 80  
15 Ala Phe Val Asp Phe Leu Ser Asp Glu Ile Lys Glu Glu Arg Lys Ile  
85 90 95  
Gln Lys His Lys Thr Leu Pro Lys Met Ser Gly Gly Trp Glu Leu Glu  
100 105 110  
Leu Asn Gly Thr Glu Ala Lys Leu Val Arg Lys Val Ala Gly Glu Lys  
20 115 120 125  
Ile Thr Val Thr Phe Asn Ile Asn Asn Ser Ile Pro Pro Thr Phe Asp  
130 135 140  
Gly Glu Glu Glu Pro Ser Gln Gly Gln Lys Val Glu Glu Gln Glu Pro  
145 150 155 160

- 167 -

Glu Leu Thr Ser Thr Pro Asn Phe Val Val Glu Val Ile Lys Asn Asp  
165 170 175  
Asp Gly Lys Lys Ala Leu Val Leu Asp Cys His Tyr Pro Glu Asp Glu  
180 185 190  
5 Val Gly Gln Glu Asp Glu Ala Glu Ser Asp Ile Phe Ser Ile Arg Glu  
195 200 205  
Val Ser Phe Gln Ser Thr Gly Glu Ser Glu Trp Lys Asp Thr Asn Tyr  
210 215 220  
Thr Leu Asn Thr Asp Ser Leu Asp Trp Ala Leu Tyr Asp His Leu Met  
10 225 230 235 240  
Asp Phe Leu Ala Asp Arg Gly Val Asp Asn Thr Phe Ala Asp Glu Leu  
245 250 255  
Val Glu Leu Ser Thr Ala Leu Glu His Gln Glu Tyr Ile Thr Phe Leu  
260 265 270  
15 Glu Asp Leu Lys Ser Phe Val Lys Ser Gln  
275 280

<210> 42

20 <211> 727

<212> PRT

<213> Homo sapiens

<220>

<221> NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial

precursor

<222> (1)..(727)

<223> Accession No. as of 09 Dec 2002: P28331

<400> 42

5

Met Leu Arg Ile Pro Val Arg Arg Ala Leu Val Gly Leu Ser Lys Ser

1 5 10 15

Pro Lys Gly Cys Val Arg Thr Thr Ala Thr Ala Ala Ser Asn Leu Ile

20 25 30

10 Glu Val Phe Val Asp Gly Gln Ser Val Met Val Glu Pro Gly Thr Thr

35 40 45

Val Leu Gln Ala Cys Glu Lys Val Gly Met Gln Ile Pro Arg Phe Cys

50 55 60

Tyr His Glu Arg Leu Ser Val Ala Gly Asn Cys Arg Met Cys Leu Val

15 65 70 75 80

Glu Ile Glu Lys Ala Pro Lys Val Val Ala Ala Cys Ala Met Pro Val

85 90 95

Met Lys Gly Trp Asn Ile Leu Thr Asn Ser Glu Lys Ser Lys Lys Ala

100 105 110

20 Arg Glu Gly Val Met Glu Phe Leu Leu Ala Asn His Pro Leu Asp Cys

115 120 125

Pro Ile Cys Asp Gln Gly Gly Glu Cys Asp Leu Gln Asp Gln Ser Met

130 135 140

Met Phe Gly Asn Asp Arg Ser Arg Phe Leu Glu Gly Lys Arg Ala Val

145	150	155	160
Glu Asp Lys Asn Ile Gly Pro Leu Val Lys Thr Ile Met Thr Arg Cys			
	165	170	175
Ile Gln Cys Thr Arg Cys Ile Arg Phe Ala Ser Glu Ile Ala Gly Val			
5	180	185	190
Asp Asp Leu Gly Thr Thr Gly Arg Gly Asn Asp Met Gln Val Gly Thr			
	195	200	205
Tyr Ile Glu Lys Met Phe Met Ser Glu Leu Ser Gly Asn Ile Ile Asp			
	210	215	220
10	Ile Cys Pro Val Gly Ala Leu Thr Ser Lys Pro Tyr Ala Phe Thr Ala		
	225	230	235 240
Arg Pro Trp Glu Thr Arg Lys Thr Glu Ser Ile Asp Val Met Asp Ala			
	245	250	255
Val Gly Ser Asn Ile Val Val Ser Thr Arg Thr Gly Glu Val Met Arg			
15	260	265	270
Ile Leu Pro Arg Met His Glu Asp Ile Asn Glu Glu Trp Ile Ser Asp			
	275	280	285
Lys Thr Arg Phe Ala Tyr Asp Gly Leu Lys Arg Gln Arg Leu Thr Glu			
	290	295	300
20	Pro Met Val Arg Asn Glu Lys Gly Leu Leu Thr Tyr Thr Ser Trp Glu		
	305	310	315 320
Asp Ala Leu Ser Arg Val Ala Gly Met Leu Gln Ser Phe Gln Gly Lys			
	325	330	335
Asp Val Ala Ala Ile Ala Gly Gly Leu Val Asp Ala Glu Ala Leu Val			

	340	345	350	
	Ala Leu Lys Asp Leu Leu Asn Arg Val Asp Ser Asp Thr Leu Cys Thr			
	355	360	365	
	Glu Glu Val Phe Pro Thr Ala Gly Ala Gly Thr Asp Leu Arg Ser Asn			
5	370	375	380	
	Tyr Leu Leu Asn Thr Thr Ile Ala Gly Val Glu Glu Ala Asp Val Val			
	385	390	395	400
	Leu Leu Val Gly Thr Asn Pro Arg Phe Glu Ala Pro Leu Phe Asn Ala			
	405	410	415	
10	Trp Ile Arg Lys Ser Trp Leu His Asn Asp Leu Lys Val Ala Leu Ile			
	420	425	430	
	Gly Ser Pro Val Asp Leu Thr Tyr Thr Tyr Asp His Leu Gly Asp Ser			
	435	440	445	
	Pro Lys Ile Leu Gln Asp Ile Ala Ser Gly Ser His Pro Phe Ser Gln			
15	450	455	460	
	Val Leu Lys Glu Ala Lys Lys Pro Met Val Val Leu Gly Ser Ser Ala			
	465	470	475	480
	Leu Gln Arg Asn Asp Gly Ala Ala Ile Leu Ala Ala Val Ser Ser Ile			
	485	490	495	
20	Ala Gln Lys Ile Arg Met Thr Ser Gly Val Thr Gly Asp Trp Lys Val			
	500	505	510	
	Met Asn Ile Leu His Arg Ile Ala Ser Gln Val Ala Ala Leu Asp Leu			
	515	520	525	
	Gly Tyr Lys Pro Gly Val Glu Ala Ile Arg Lys Asn Pro Pro Lys Val			



530 535 540  
Leu Phe Leu Leu Gly Ala Asp Gly Gly Cys Ile Thr Arg Gln Asp Leu  
545 550 555 560  
Pro Lys Asp Cys Phe Ile Ile Tyr Gln Gly His His Gly Asp Val Gly  
5 565 570 575  
Ala Pro Ile Ala Asp Val Ile Leu Pro Gly Ala Ala Tyr Thr Glu Lys  
580 585 590  
Ser Ala Thr Tyr Val Asn Thr Glu Gly Arg Ala Gln Gln Thr Lys Val  
595 600 605  
10 Ala Val Thr Pro Pro Gly Leu Ala Arg Glu Asp Trp Lys Ile Ile Arg  
610 615 620  
Ala Leu Ser Glu Ile Ala Gly Met Thr Leu Pro Tyr Asp Thr Leu Asp  
625 630 635 640  
Gln Val Arg Asn Arg Leu Glu Glu Phe Ser Pro Asn Leu Val Arg Tyr  
15 645 650 655  
Asp Asp Ile Glu Gly Ala Asn Tyr Phe Gln Gln Ala Asn Glu Leu Ser  
660 665 670  
Lys Leu Val Asn Gln Gln Leu Leu Ala Asp Pro Leu Val Pro Pro Gln  
675 680 685  
20 Leu Thr Leu Lys Asp Phe Tyr Met Thr Asp Ser Ile Ser Arg Ala Ser  
690 695 700  
Gln Thr Met Ala Lys Cys Val Lys Ala Val Thr Glu Gly Ala Gln Ala  
705 710 715 720  
Val Glu Glu Pro Ser Ile Cys

725

<210> 43  
5 <211> 491  
<212> PRT  
<213> Homo sapiens  
<220>  
<221> Pre-B cell enhancing factor precursor  
10 <222> (1)..(491)  
<223> Accession No. as of 09 Dec 2002: P43490  
<400> 43

Met Asn Pro Ala Ala Glu Ala Glu Phe Asn Ile Leu Leu Ala Thr Asp  
15 1 5 10 15  
Ser Tyr Lys Val Thr His Tyr Lys Gln Tyr Pro Pro Asn Thr Ser Lys  
20 25 30  
Val Tyr Ser Tyr Phe Glu Cys Arg Glu Lys Lys Thr Glu Asn Ser Lys  
35 40 45  
20 Leu Arg Lys Val Lys Tyr Glu Glu Thr Val Phe Tyr Gly Leu Gln Tyr  
50 55 60  
Ile Leu Asn Lys Tyr Leu Lys Gly Lys Val Val Thr Lys Glu Lys Ile  
65 70 75 80  
Gln Glu Ala Lys Asp Val Tyr Lys Glu His Phe Gln Asp Asp Val Phe

	85	90	95
	Asn Glu Lys Gly Trp Asn Tyr Ile Leu Glu Lys Tyr Asp Gly His Leu		
	100	105	110
	Pro Ile Glu Ile Lys Ala Val Pro Glu Gly Phe Val Ile Pro Arg Gly		
5	115	120	125
	Asn Val Leu Phe Thr Val Glu Asn Thr Asp Pro Glu Cys Tyr Trp Leu		
	130	135	140
	Thr Asn Trp Ile Glu Thr Ile Leu Val Gln Ser Trp Tyr Pro Ile Thr		
	145	150	155
			160
10	Val Ala Thr Asn Ser Arg Glu Gln Lys Lys Ile Leu Ala Lys Tyr Leu		
	165	170	175
	Leu Glu Thr Ser Gly Asn Leu Asp Gly Leu Glu Tyr Lys Leu His Asp		
	180	185	190
	Phe Gly Tyr Arg Gly Val Ser Ser Gln Glu Thr Ala Gly Ile Gly Ala		
15	195	200	205
	Ser Ala His Leu Val Asn Phe Lys Gly Thr Asp Thr Val Ala Gly Leu		
	210	215	220
	Ala Leu Ile Lys Lys Tyr Tyr Gly Thr Lys Asp Pro Val Pro Gly Tyr		
	225	230	235
			240
20	Ser Val Pro Ala Ala Glu His Ser Thr Ile Thr Ala Trp Gly Lys Asp		
	245	250	255
	His Glu Lys Asp Ala Phe Glu His Ile Val Thr Gln Phe Ser Ser Val		
	260	265	270
	Pro Val Ser Val Val Ser Asp Ser Tyr Asp Ile Tyr Asn Ala Cys Glu		

	275		280		285	
	Lys Ile Trp Gly Glu Asp Leu Arg His Leu Ile Val Ser Arg Ser Thr					
	290		295		300	
	Gln Ala Pro Leu Ile Ile Arg Pro Asp Ser Gly Asn Pro Leu Asp Thr					
5	305		310		315	320
	Val Leu Lys Val Leu Glu Ile Leu Gly Lys Lys Phe Pro Val Thr Glu					
		325		330		335
	Asn Ser Lys Gly Tyr Lys Leu Leu Pro Pro Tyr Leu Arg Val Ile Gln					
		340		345		350
10	Gly Asp Gly Val Asp Ile Asn Thr Leu Gln Glu Ile Val Glu Gly Met					
		355		360		365
	Lys Gln Lys Met Trp Ser Ile Glu Asn Ile Ala Phe Gly Ser Gly Gly					
		370		375		380
	Gly Leu Leu Gln Lys Leu Thr Arg Asp Leu Leu Asn Cys Ser Phe Lys					
15	385		390		395	400
	Cys Ser Tyr Val Val Thr Asn Gly Leu Gly Ile Asn Val Phe Lys Asp					
		405		410		415
	Pro Val Ala Asp Pro Asn Lys Arg Ser Lys Lys Gly Arg Leu Ser Leu					
		420		425		430
20	His Arg Thr Pro Ala Gly Asn Phe Val Thr Leu Glu Glu Gly Lys Gly					
		435		440		445
	Asp Leu Glu Glu Tyr Gly Gln Asp Leu Leu His Thr Val Phe Lys Asn					
		450		455		460
	Gly Lys Val Thr Lys Ser Tyr Ser Phe Asp Glu Ile Arg Lys Asn Ala					

465                                      470                                      475                                      480

Gln Leu Asn Ile Glu Leu Glu Ala Ala His His

485                                      490

5

<210> 44

<211> 135

<212> PRT

<213> Homo sapiens

10 <220>

<221> Retinol-binding protein I, cellular

<222> (1)..(135)

<223> Accession No. as of 09 Dec 2002: P09455

<400> 44

15

Met Pro Val Asp Phe Thr Gly Tyr Trp Lys Met Leu Val Asn Glu Asn

1                                      5                                      10                                      15

Phe Glu Glu Tyr Leu Arg Ala Leu Asp Val Asn Val Ala Leu Arg Lys

20                                      25                                      30

20 Ile Ala Asn Leu Leu Lys Pro Asp Lys Glu Ile Val Gln Asp Gly Asp

35                                      40                                      45

His Met Ile Ile Arg Thr Leu Ser Thr Phe Arg Asn Tyr Ile Met Asp

50                                      55                                      60

Phe Gln Val Gly Lys Glu Phe Glu Glu Asp Leu Thr Gly Ile Asp Asp



	20		25		30							
	Ala Asp Ile Ile Arg Thr Cys Leu Gly Pro Lys Ser Met Met Lys Met											
	35		40		45							
	Leu Leu Asp Pro Met Gly Gly Ile Val Met Thr Asn Asp Gly Asn Ala											
5	50		55		60							
	Ile Leu Arg Glu Ile Gln Val Gln His Pro Ala Ala Lys Ser Met Ile											
	65		70		75	80						
	Glu Ile Ser Arg Thr Gln Asp Glu Glu Val Gly Asp Gly Thr Thr Ser											
		85		90		95						
10	Val Ile Ile Leu Ala Gly Glu Met Leu Ser Val Ala Glu His Phe Leu											
	100		105		110							
	Glu Gln Gln Met His Pro Thr Val Val Ile Ser Ala Tyr Arg Lys Ala											
	115		120		125							
	Leu Asp Asp Met Ile Ser Thr Leu Lys Lys Ile Ser Ile Pro Val Asp											
15	130		135		140							
	Ile Ser Asp Ser Asp Met Met Leu Asn Ile Ile Asn Ser Ser Ile Thr											
	145		150		155	160						
	Thr Lys Ala Ile Ser Arg Trp Ser Ser Leu Ala Cys Asn Ile Ala Leu											
		165		170		175						
20	Asp Ala Val Lys Met Val Gln Phe Glu Glu Asn Gly Arg Lys Glu Ile											
	180		185		190							
	Asp Ile Lys Lys Tyr Ala Arg Val Glu Lys Ile Pro Gly Gly Ile Ile											
	195		200		205							
	Glu Asp Ser Cys Val Leu Arg Gly Val Met Ile Asn Lys Asp Val Thr											

210	215	220	
His Pro Arg Met Arg Arg Tyr Ile Lys Asn Pro Arg Ile Val Leu Leu			
225	230	235	240
Asp Ser Ser Leu Glu Tyr Lys Lys Gly Glu Ser Gln Thr Asp Ile Glu			
5	245	250	255
Ile Thr Arg Glu Glu Asp Phe Thr Arg Ile Leu Gln Met Glu Glu Glu			
	260	265	270
Tyr Ile Gln Gln Leu Cys Glu Asp Ile Ile Gln Leu Lys Pro Asp Val			
	275	280	285
10 Val Ile Thr Glu Lys Gly Ile Ser Asp Leu Ala Gln His Tyr Leu Met			
	290	295	300
Arg Ala Asn Ile Thr Ala Ile Arg Arg Val Arg Lys Thr Asp Asn Asn			
305	310	315	320
Arg Ile Ala Arg Ala Cys Gly Ala Arg Ile Val Ser Arg Pro Glu Glu			
15	325	330	335
Leu Arg Glu Asp Asp Val Gly Thr Gly Ala Gly Leu Leu Glu Ile Lys			
	340	345	350
Lys Ile Gly Asp Glu Tyr Phe Thr Phe Ile Thr Asp Cys Lys Asp Pro			
	355	360	365
20 Lys Ala Cys Thr Ile Leu Leu Arg Gly Ala Ser Lys Glu Ile Leu Ser			
	370	375	380
Glu Val Glu Arg Asn Leu Gln Asp Ala Met Gln Val Cys Arg Asn Val			
385	390	395	400
Leu Leu Asp Pro Gln Leu Val Pro Gly Gly Gly Ala Ser Glu Met Ala			



	405	410	415
	Val Ala His Ala Leu Thr Glu Lys Ser Lys Ala Met Thr Gly Val Glu		
	420	425	430
	Gln Trp Pro Tyr Arg Ala Val Ala Gln Ala Leu Glu Val Ile Pro Arg		
5	435	440	445
	Thr Leu Ile Gln Asn Cys Gly Ala Ser Thr Ile Arg Leu Leu Thr Ser		
	450	455	460
	Leu Arg Ala Lys His Thr Gln Glu Asn Cys Glu Thr Trp Gly Val Asn		
	465	470	475 480
10	Gly Glu Thr Gly Thr Leu Val Asp Met Lys Glu Leu Gly Ile Trp Glu		
	485	490	495
	Pro Leu Ala Val Lys Leu Gln Thr Tyr Lys Thr Ala Val Glu Thr Ala		
	500	505	510
	Val Leu Leu Leu Arg Ile Asp Asp Ile Val Ser Gly His Lys Lys Lys		
15	515	520	525
	Gly Asp Asp Gln Ser Arg Gln Gly Gly Ala Pro Asp Ala Gly Gln Glu		
	530	535	540

20 <210> 46

<211> 461

<212> PRT

<213> Homo sapiens

<220>

<221> Placental ribonuclease inhibitor

<222> (1)..(461)

<223> Accession No. as of 09 Dec 2002: P13489

<400> 46

5

Met Ser Leu Asp Ile Gln Ser Leu Asp Ile Gln Cys Glu Glu Leu Ser

1 5 10 15

Asp Ala Arg Trp Ala Glu Leu Leu Pro Leu Leu Gln Gln Cys Gln Val

20 25 30

10 Val Arg Leu Asp Asp Cys Gly Leu Thr Glu Ala Arg Cys Lys Asp Ile

35 40 45

Ser Ser Ala Leu Arg Val Asn Pro Ala Leu Ala Glu Leu Asn Leu Arg

50 55 60

Ser Asn Glu Leu Gly Asp Val Gly Val His Cys Val Leu Gln Gly Leu

15 65 70 75 80

Gln Thr Pro Ser Cys Lys Ile Gln Lys Leu Ser Leu Gln Asn Cys Cys

85 90 95

Leu Thr Gly Ala Gly Cys Gly Val Leu Ser Ser Thr Leu Arg Thr Leu

100 105 110

20 Pro Thr Leu Gln Glu Leu His Leu Ser Asp Asn Leu Leu Gly Asp Ala

115 120 125

Gly Leu Gln Leu Leu Cys Glu Gly Leu Leu Asp Pro Gln Cys Arg Leu

130 135 140

Glu Lys Leu Gln Leu Glu Tyr Cys Ser Leu Ser Ala Ala Ser Cys Glu

145	150	155	160
Pro Leu Ala Ser Val Leu Arg Ala Lys Pro Asp Phe Lys Glu Leu Thr			
	165	170	175
Val Ser Asn Asn Asp Ile Asn Glu Ala Gly Val Arg Val Leu Cys Gln			
5	180	185	190
Gly Leu Lys Asp Ser Pro Cys Gln Leu Glu Ala Leu Lys Leu Glu Ser			
	195	200	205
Cys Gly Val Thr Ser Asp Asn Cys Arg Asp Leu Cys Gly Ile Val Ala			
	210	215	220
10	Ser Lys Ala Ser Leu Arg Glu Leu Ala Leu Gly Ser Asn Lys Leu Gly		
	225	230	235
	240		
Asp Val Gly Met Ala Glu Leu Cys Pro Gly Leu Leu His Pro Ser Ser			
	245	250	255
Arg Leu Arg Thr Leu Trp Ile Trp Glu Cys Gly Ile Thr Ala Lys Gly			
15	260	265	270
Cys Gly Asp Leu Cys Arg Val Leu Arg Ala Lys Glu Ser Leu Lys Glu			
	275	280	285
Leu Ser Leu Ala Gly Asn Glu Leu Gly Asp Glu Gly Ala Arg Leu Leu			
	290	295	300
20	Cys Glu Thr Leu Leu Glu Pro Gly Cys Gln Leu Glu Ser Leu Trp Val		
	305	310	315
	320		
Lys Ser Cys Ser Phe Thr Ala Ala Cys Cys Ser His Phe Ser Ser Val			
	325	330	335
Leu Ala Gln Asn Arg Phe Leu Leu Glu Leu Gln Ile Ser Asn Asn Arg			

	340	345	350	
	Leu Glu Asp Ala Gly Val Arg Glu Leu Cys Gln Gly Leu Gly Gln Pro			
	355	360	365	
	Gly Ser Val Leu Arg Val Leu Trp Leu Ala Asp Cys Asp Val Ser Asp			
5	370	375	380	
	Ser Ser Cys Ser Ser Leu Ala Ala Thr Leu Leu Ala Asn His Ser Leu			
	385	390	395	400
	Arg Glu Leu Asp Leu Ser Asn Asn Cys Leu Gly Asp Ala Gly Ile Leu			
	405	410	415	
10	Gln Leu Val Glu Ser Val Arg Gln Pro Gly Cys Leu Leu Glu Gln Leu			
	420	425	430	
	Val Leu Tyr Asp Ile Tyr Trp Ser Glu Glu Met Glu Asp Arg Leu Gln			
	435	440	445	
	Ala Leu Glu Lys Asp Lys Pro Ser Leu Arg Val Ile Ser			
15	450	455	460	

<210> 47

<211> 317

20 <212> PRT

<213> Homo sapiens

<220>

<221> Guanine nucleotide-binding protein beta subunit-like protein 12.3

<222> (1)..(317)

<223> Accession No. as of 09 Dec 2002: P25388

<400> 47

Met Thr Glu Gln Met Thr Leu Arg Gly Thr Leu Lys Gly His Asn Gly  
5 1 5 10 15  
Trp Val Thr Gln Ile Ala Thr Thr Pro Gln Phe Pro Asp Met Ile Leu  
20 25 30  
Ser Ala Ser Arg Asp Lys Thr Ile Ile Met Trp Lys Leu Thr Arg Asp  
35 40 45  
10 Glu Thr Asn Tyr Gly Ile Pro Gln Arg Ala Leu Arg Gly His Ser His  
50 55 60  
Phe Val Ser Asp Val Val Ile Ser Ser Asp Gly Gln Phe Ala Leu Ser  
65 70 75 80  
Gly Ser Trp Asp Gly Thr Leu Arg Leu Trp Asp Leu Thr Thr Gly Thr  
15 85 90 95  
Thr Thr Arg Arg Phe Val Gly His Thr Lys Asp Val Leu Ser Val Ala  
100 105 110  
Phe Ser Ser Asp Asn Arg Gln Ile Val Ser Gly Ser Arg Asp Lys Thr  
115 120 125  
20 Ile Lys Leu Trp Asn Thr Leu Gly Val Cys Lys Tyr Thr Val Gln Asp  
130 135 140  
Glu Ser His Ser Glu Trp Val Ser Cys Val Arg Phe Ser Pro Asn Ser  
145 150 155 160  
Ser Asn Pro Ile Ile Val Ser Cys Gly Trp Asp Lys Leu Val Lys Val

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	165	170	175
	Trp Asn Leu Ala Asn Cys Lys Leu Lys Thr Asn His Ile Gly His Thr		
	180	185	190
	Gly Tyr Leu Asn Thr Val Thr Val Ser Pro Asp Gly Ser Leu Cys Ala		
5	195	200	205
	Ser Gly Gly Lys Asp Gly Gln Ala Met Leu Trp Asp Leu Asn Glu Gly		
	210	215	220
	Lys His Leu Tyr Thr Leu Asp Gly Gly Asp Ile Ile Asn Ala Leu Cys		
	225	230	235 240
10	Phe Ser Pro Asn Arg Tyr Trp Leu Cys Ala Ala Thr Gly Pro Ser Ile		
	245	250	255
	Lys Ile Trp Asp Leu Glu Gly Lys Ile Ile Val Asp Glu Leu Lys Gln		
	260	265	270
	Glu Val Ile Ser Thr Ser Ser Lys Ala Glu Pro Pro Gln Cys Thr Ser		
15	275	280	285
	Leu Ala Trp Ser Ala Asp Gly Gln Thr Leu Phe Ala Gly Tyr Thr Asp		
	290	295	300
	Asn Leu Val Arg Val Trp Gln Val Thr Ile Gly Thr Arg		
	305	310	315

20

<210> 48

<211> 172

<212> PRT

<213> Homo sapiens

<220>

<221> Myosin regulatory light chain 2

<222> (1)..(172)

5 <223> Accession No. as of 10 Dec 2002: P24844

<400> 48

Met Ser Ser Lys Arg Ala Lys Ala Lys Thr Thr Lys Lys Arg Pro Gln  
1 5 10 15  
10 Arg Ala Thr Ser Asn Val Phe Ala Met Phe Asp Gln Ser Gln Ile Gln  
20 25 30  
Glu Phe Lys Glu Ala Phe Asn Met Ile Asp Gln Asn Arg Asp Gly Phe  
35 40 45  
Ile Asp Lys Glu Asp Leu His Asp Met Leu Ala Ser Leu Gly Lys Asn  
15 50 55 60  
Pro Thr Asp Glu Tyr Leu Glu Gly Met Met Ser Glu Ala Pro Gly Pro  
65 70 75 80  
Ile Asn Phe Thr Met Phe Leu Thr Met Phe Gly Glu Lys Leu Asn Gly  
85 90 95  
20 Thr Asp Pro Glu Asp Val Ile Arg Asn Ala Phe Ala Cys Phe Asp Glu  
100 105 110  
Glu Ala Ser Gly Phe Ile His Glu Asp His Leu Arg Glu Leu Leu Thr  
115 120 125  
Thr Met Gly Asp Arg Phe Thr Asp Glu Glu Val Asp Glu Met Tyr Arg

130 135 140  
Glu Ala Pro Ile Asp Lys Lys Gly Asn Phe Asn Tyr Val Glu Phe Thr  
145 150 155 160  
Arg Ile Leu Lys His Gly Ala Lys Asp Lys Asp Asp  
5 165 170

<210> 49  
<211> 114  
10 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Calgranulin B  
<222> (1)..(114)  
15 <223> Accession No. as of 10 Dec 2002: P06702  
<400> 49

Met Thr Cys Lys Met Ser Gln Leu Glu Arg Asn Ile Glu Thr Ile Ile  
1 5 10 15  
20 Asn Thr Phe His Gln Tyr Ser Val Lys Leu Gly His Pro Asp Thr Leu  
20 25 30  
Asn Gln Gly Glu Phe Lys Glu Leu Val Arg Lys Asp Leu Gln Asn Phe  
35 40 45  
Leu Lys Lys Glu Asn Lys Asn Glu Lys Val Ile Glu His Ile Met Glu



50 55 60  
Asp Leu Asp Thr Asn Ala Asp Lys Gln Leu Ser Phe Glu Glu Phe Ile  
65 70 75 80  
Met Leu Met Ala Arg Leu Thr Trp Ala Ser His Glu Lys Met His Glu  
5 85 90 95  
Gly Asp Glu Gly Pro Gly His His His Lys Pro Gly Leu Gly Glu Gly  
100 105 110  
Thr Pro

10

<210> 50  
<211> 348  
<212> PRT  
15 <213> Homo sapiens  
<220>  
<221> Macrophage capping protein  
<222> (1)..(348)  
<223> Accession No. as of 10 Dec 2002: P40121  
20 <400> 50

Met Tyr Thr Ala Ile Pro Gln Ser Gly Ser Pro Phe Pro Gly Ser Val  
1 5 10 15  
Gln Asp Pro Gly Leu His Val Trp Arg Val Glu Lys Leu Lys Pro Val

	20	25	30
	Pro Val Ala Gln Glu Asn Gln Gly Val Phe Phe Ser Gly Asp Ser Tyr		
	35	40	45
	Leu Val Leu His Asn Gly Pro Glu Glu Val Ser His Leu His Leu Trp		
5	50	55	60
	Ile Gly Gln Gln Ser Ser Arg Asp Glu Gln Gly Ala Cys Ala Val Leu		
	65	70	75 80
	Ala Val His Leu Asn Thr Leu Leu Gly Glu Arg Pro Val Gln His Arg		
	85	90	95
10	Glu Val Gln Gly Asn Glu Ser Asp Leu Phe Met Ser Tyr Phe Pro Arg		
	100	105	110
	Gly Leu Lys Tyr Gln Glu Gly Gly Val Glu Ser Ala Phe His Lys Thr		
	115	120	125
	Ser Thr Gly Ala Pro Ala Ala Ile Lys Lys Leu Tyr Gln Val Lys Gly		
15	130	135	140
	Lys Lys Asn Ile Arg Ala Thr Glu Arg Ala Leu Asn Trp Asp Ser Phe		
	145	150	155 160
	Asn Thr Gly Asp Cys Phe Ile Leu Asp Leu Gly Gln Asn Ile Phe Ala		
	165	170	175
20	Trp Cys Gly Gly Lys Ser Asn Ile Leu Glu Arg Asn Lys Ala Arg Asp		
	180	185	190
	Leu Ala Leu Ala Ile Arg Asp Ser Glu Arg Gln Gly Lys Ala Gln Val		
	195	200	205
	Glu Ile Val Thr Asp Gly Glu Glu Pro Ala Glu Met Ile Gln Val Leu		

210	215	220
Gly Pro Lys Pro Ala Leu Lys Glu Gly Asn Pro Glu Glu Asp Leu Thr		
225	230	235
Ala Asp Lys Ala Asn Ala Gln Ala Ala Ala Leu Tyr Lys Val Ser Asp		
5	245	250
Ala Thr Gly Gln Met Asn Leu Thr Lys Val Ala Asp Ser Ser Pro Phe		
	260	265
Ala Leu Glu Leu Leu Ile Ser Asp Asp Cys Phe Val Leu Asp Asn Gly		
	275	280
10	Leu Cys Gly Lys Ile Tyr Ile Trp Lys Gly Arg Lys Ala Asn Glu Lys	
	290	300
Glu Arg Gln Ala Ala Leu Gln Val Ala Glu Gly Phe Ile Ser Arg Met		
305	310	315
Gln Tyr Ala Pro Asn Thr Gln Val Glu Ile Leu Pro Gln Gly Arg Glu		
15	325	330
Ser Pro Ile Phe Lys Gln Phe Phe Lys Asp Trp Lys		
	340	345

20 <210> 51

<211> 346

<212> PRT

<213> Homo sapiens

<220>

<221> Annexin I

<222> (1)..(346)

<223> Accession No. as of 10 Dec 2002: P04083

<400> 51

5

Met Ala Met Val Ser Glu Phe Leu Lys Gln Ala Trp Phe Ile Glu Asn

1 5 10 15

Glu Glu Gln Glu Tyr Val Gln Thr Val Lys Ser Ser Lys Gly Gly Pro

20 25 30

10 Gly Ser Ala Val Ser Pro Tyr Pro Thr Phe Asn Pro Ser Ser Asp Val

35 40 45

Ala Ala Leu His Lys Ala Ile Met Val Lys Gly Val Asp Glu Ala Thr

50 55 60

Ile Ile Asp Ile Leu Thr Lys Arg Asn Asn Ala Gln Arg Gln Gln Ile

15 65 70 75 80

Lys Ala Ala Tyr Leu Gln Glu Thr Gly Lys Pro Leu Asp Glu Thr Leu

85 90 95

Lys Lys Ala Leu Thr Gly His Leu Glu Glu Val Val Leu Ala Leu Leu

100 105 110

20 Lys Thr Pro Ala Gln Phe Asp Ala Asp Glu Leu Arg Ala Ala Met Lys

115 120 125

Gly Leu Gly Thr Asp Glu Asp Thr Leu Ile Glu Ile Leu Ala Ser Arg

130 135 140

Thr Asn Lys Glu Ile Arg Asp Ile Asn Arg Val Tyr Arg Glu Glu Leu

145	150	155	160
Lys Arg Asp Leu Ala Lys Asp Ile Thr Ser Asp Thr Ser Gly Asp Phe			
	165	170	175
Arg Asn Ala Leu Leu Ser Leu Ala Lys Gly Asp Arg Ser Glu Asp Phe			
5	180	185	190
Gly Val Asn Glu Asp Leu Ala Asp Ser Asp Ala Arg Ala Leu Tyr Glu			
	195	200	205
Ala Gly Glu Arg Arg Lys Gly Thr Asp Val Asn Val Phe Asn Thr Ile			
	210	215	220
10	Leu Thr Thr Arg Ser Tyr Pro Gln Leu Arg Arg Val Phe Gln Lys Tyr		
	225	230	235 240
Thr Lys Tyr Ser Lys His Asp Met Asn Lys Val Leu Asp Leu Glu Leu			
	245	250	255
Lys Gly Asp Ile Glu Lys Cys Leu Thr Ala Ile Val Lys Cys Ala Thr			
15	260	265	270
Ser Lys Pro Ala Phe Phe Ala Glu Lys Leu His Gln Ala Met Lys Gly			
	275	280	285
Val Gly Thr Arg His Lys Ala Leu Ile Arg Ile Met Val Ser Arg Ser			
	290	295	300
20	Glu Ile Asp Met Asn Asp Ile Lys Ala Phe Tyr Gln Lys Met Tyr Gly		
	305	310	315 320
Ile Ser Leu Cys Gln Ala Ile Leu Asp Glu Thr Lys Gly Asp Tyr Glu			
	325	330	335
Lys Ile Leu Val Ala Leu Cys Gly Gly Asn			

340

345

<210> 52

5 <211> 469

<212> PRT

<213> Homo sapiens

<220>

<221> Keratin, type II cytoskeletal 7

10 <222> (1)..(469)

<223> Accession No. as of 10 Dec 2002: P08729

<400> 52

Met Ser Ile His Phe Ser Ser Pro Val Phe Thr Ser Arg Ser Ala Ala

15 1

5

10

15

Phe Ser Gly Arg Gly Ala Gln Val Arg Leu Ser Ser Ala Arg Pro Gly

20

25

30

Gly Leu Gly Ser Ser Ser Leu Tyr Gly Leu Gly Ala Ser Arg Pro Arg

35

40

45

20 Val Ala Val Arg Ser Ala Tyr Gly Gly Pro Val Gly Ala Gly Ile Arg

50

55

60

Glu Val Thr Ile Asn Gln Ser Leu Leu Ala Pro Leu Arg Leu Asp Ala

65

70

75

80

Asp Pro Ser Leu Gln Arg Val Arg Gln Glu Glu Ser Glu Gln Ile Lys

	85	90	95	
	Thr Leu Asn Asn Lys Phe Ala Ser Phe Ile Asp Lys Val Arg Phe Leu			
	100	105	110	
	Glu Gln Gln Asn Lys Leu Leu Glu Thr Lys Trp Thr Leu Leu Gln Glu			
5	115	120	125	
	Gln Lys Ser Ala Lys Ser Ser Arg Leu Pro Asp Ile Phe Glu Ala Gln			
	130	135	140	
	Ile Ala Gly Leu Arg Gly Gln Leu Glu Ala Leu Gln Val Asp Gly Gly			
	145	150	155	160
10	Arg Leu Glu Gln Gly Leu Arg Thr Met Gln Asp Val Val Glu Asp Phe			
	165	170	175	
	Lys Asn Lys Tyr Glu Asp Glu Ile Asn Arg Arg Thr Ala Ala Glu Asn			
	180	185	190	
	Glu Phe Val Val Leu Lys Lys Asp Val Asp Ala Ala Tyr Met Ser Lys			
15	195	200	205	
	Val Glu Leu Glu Ala Lys Val Asp Ala Leu Asn Asp Glu Ile Asn Phe			
	210	215	220	
	Leu Arg Thr Leu Asn Glu Thr Glu Leu Thr Glu Leu Gln Ser Gln Ile			
	225	230	235	240
20	Ser Asp Thr Ser Val Val Leu Ser Met Asp Asn Ser Arg Ser Leu Asp			
	245	250	255	
	Leu Asp Gly Ile Ile Ala Glu Val Lys Ala Gln Tyr Glu Glu Met Ala			
	260	265	270	
	Lys Cys Ser Arg Ala Glu Ala Glu Ala Trp Tyr Gln Thr Lys Phe Glu			

	275	280	285
	Thr Leu Gln Ala Gln Ala Gly Lys His Gly Asp Asp Leu Arg Asn Thr		
	290	295	300
	Arg Asn Glu Ile Ser Glu Met Asn Arg Ala Ile Gln Arg Leu Gln Ala		
5	305	310	315 320
	Glu Ile Asp Asn Ile Lys Asn Gln Arg Ala Lys Leu Glu Ala Ala Ile		
	325	330	335
	Ala Glu Ala Glu Glu Arg Gly Glu Leu Ala Leu Lys Asp Ala Arg Ala		
	340	345	350
10	Lys Gln Glu Glu Leu Glu Ala Ala Leu Gln Arg Ala Lys Gln Asp Met		
	355	360	365
	Ala Arg Gln Leu Arg Glu Tyr Gln Glu Leu Met Ser Val Lys Leu Ala		
	370	375	380
	Leu Asp Ile Glu Ile Ala Thr Tyr Arg Lys Leu Leu Glu Gly Glu Glu		
15	385	390	395 400
	Ser Arg Leu Ala Gly Asp Gly Val Gly Ala Val Asn Ile Ser Val Met		
	405	410	415
	Asn Ser Thr Gly Gly Ser Ser Ser Gly Gly Gly Ile Gly Leu Thr Leu		
	420	425	430
20	Gly Gly Thr Met Gly Ser Asn Ala Leu Ser Phe Ser Ser Ser Ala Gly		
	435	440	445
	Pro Gly Leu Leu Lys Ala Tyr Ser Ile Arg Thr Ala Ser Ala Ser Arg		
	450	455	460
	Arg Ser Ala Arg Asp		



465

<210> 53

5 <211> 836

<212> PRT

<213> Homo sapiens

<220>

<221> Osteoblast specific factor 2 precursor

10 <222> (1)..(836)

<223> Accession No. as of 10 Dec 2002: Q15063

<400> 53

Met Ile Pro Phe Leu Pro Met Phe Ser Leu Leu Leu Leu Leu Ile Val  
15 1 5 10 15  
Asn Pro Ile Asn Ala Asn Asn His Tyr Asp Lys Ile Leu Ala His Ser  
20 25 30  
Arg Ile Arg Gly Arg Asp Gln Gly Pro Asn Val Cys Ala Leu Gln Gln  
35 40 45  
20 Ile Leu Gly Thr Lys Lys Lys Tyr Phe Ser Thr Cys Lys Asn Trp Tyr  
50 55 60  
Lys Lys Ser Ile Cys Gly Gln Lys Thr Thr Val Leu Tyr Glu Cys Cys  
65 70 75 80  
Pro Gly Tyr Met Arg Met Glu Gly Met Lys Gly Cys Pro Ala Val Leu

	85	90	95	
	Pro Ile Asp His Val Tyr Gly Thr Leu Gly Ile Val Gly Ala Thr Thr			
	100	105	110	
	Thr Gln Arg Tyr Ser Asp Ala Ser Lys Leu Arg Glu Glu Ile Glu Gly			
5	115	120	125	
	Lys Gly Ser Phe Thr Tyr Phe Ala Pro Ser Asn Glu Ala Trp Asp Asn			
	130	135	140	
	Leu Asp Ser Asp Ile Arg Arg Gly Leu Glu Ser Asn Val Asn Val Glu			
	145	150	155	160
10	Leu Leu Asn Ala Leu His Ser His Met Ile Asn Lys Arg Met Leu Thr			
	165	170	175	
	Lys Asp Leu Lys Asn Gly Met Ile Ile Pro Ser Met Tyr Asn Asn Leu			
	180	185	190	
	Gly Leu Phe Ile Asn His Tyr Pro Asn Gly Val Val Thr Val Asn Cys			
15	195	200	205	
	Ala Arg Ile Ile His Gly Asn Gln Ile Ala Thr Asn Gly Val Val His			
	210	215	220	
	Val Ile Asp Arg Val Leu Thr Gln Ile Gly Thr Ser Ile Gln Asp Phe			
	225	230	235	240
20	Ile Glu Ala Glu Asp Asp Leu Ser Ser Phe Arg Ala Ala Ala Ile Thr			
	245	250	255	
	Ser Asp Ile Leu Glu Ala Leu Gly Arg Asp Gly His Phe Thr Leu Phe			
	260	265	270	
	Ala Pro Thr Asn Glu Ala Phe Glu Lys Leu Pro Arg Gly Val Leu Glu			

	275		280		285	
	Arg Phe Met Gly Asp Lys Val Ala Ser Glu Ala Leu Met Lys Tyr His					
	290		295		300	
	Ile Leu Asn Thr Leu Gln Cys Ser Glu Ser Ile Met Gly Gly Ala Val					
5	305		310		315	320
	Phe Glu Thr Leu Glu Gly Asn Thr Ile Glu Ile Gly Cys Asp Gly Asp					
		325		330		335
	Ser Ile Thr Val Asn Gly Ile Lys Met Val Asn Lys Lys Asp Ile Val					
		340		345		350
10	Thr Asn Asn Gly Val Ile His Leu Ile Asp Gln Val Leu Ile Pro Asp					
		355		360		365
	Ser Ala Lys Gln Val Ile Glu Leu Ala Gly Lys Gln Gln Thr Thr Phe					
		370		375		380
	Thr Asp Leu Val Ala Gln Leu Gly Leu Ala Ser Ala Leu Arg Pro Asp					
15	385		390		395	400
	Gly Glu Tyr Thr Leu Leu Ala Pro Val Asn Asn Ala Phe Ser Asp Asp					
		405		410		415
	Thr Leu Ser Met Val Gln Arg Leu Leu Lys Leu Ile Leu Gln Asn His					
		420		425		430
20	Ile Leu Lys Val Lys Val Gly Leu Asn Glu Leu Tyr Asn Gly Gln Ile					
		435		440		445
	Leu Glu Thr Ile Gly Gly Lys Gln Leu Arg Val Phe Val Tyr Arg Thr					
		450		455		460
	Ala Val Cys Ile Glu Asn Ser Cys Met Glu Lys Gly Ser Lys Gln Gly					

465	470	475	480
Arg Asn Gly Ala Ile His Ile Phe Arg Glu Ile Ile Lys Pro Ala Glu			
	485	490	495
Lys Ser Leu His Glu Lys Leu Lys Gln Asp Lys Arg Phe Ser Thr Phe			
5	500	505	510
Leu Ser Leu Leu Glu Ala Ala Asp Leu Lys Glu Leu Leu Thr Gln Pro			
	515	520	525
Gly Asp Trp Thr Leu Phe Val Pro Thr Asn Asp Ala Phe Lys Gly Met			
	530	535	540
10	Thr Ser Glu Glu Lys Glu Ile Leu Ile Arg Asp Lys Asn Ala Leu Gln		
	545	550	555
	Asn Ile Ile Leu Tyr His Leu Thr Pro Gly Val Phe Ile Gly Lys Gly		
	565	570	575
Phe Glu Pro Gly Val Thr Asn Ile Leu Lys Thr Thr Gln Gly Ser Lys			
15	580	585	590
Ile Phe Leu Lys Glu Val Asn Asp Thr Leu Leu Val Asn Glu Leu Lys			
	595	600	605
Ser Lys Glu Ser Asp Ile Met Thr Thr Asn Gly Val Ile His Val Val			
	610	615	620
20	Asp Lys Leu Leu Tyr Pro Ala Asp Thr Pro Val Gly Asn Asp Gln Leu		
	625	630	635
	Leu Glu Ile Leu Asn Lys Leu Ile Lys Tyr Ile Gln Ile Lys Phe Val		
	645	650	655
Arg Gly Ser Thr Phe Lys Glu Ile Pro Val Thr Val Tyr Thr Thr Lys			

	660	665	670	
	Ile Ile Thr Lys Val Val Glu Pro Lys Ile Lys Val Ile Glu Gly Ser			
	675	680	685	
	Leu Gln Pro Ile Ile Lys Thr Glu Gly Pro Thr Leu Thr Lys Val Lys			
5	690	695	700	
	Ile Glu Gly Glu Pro Glu Phe Arg Leu Ile Lys Glu Gly Glu Thr Ile			
	705	710	715	720
	Thr Glu Val Ile His Gly Glu Pro Ile Ile Lys Lys Tyr Thr Lys Ile			
	725	730	735	
10	Ile Asp Gly Val Pro Val Glu Ile Thr Glu Lys Glu Thr Arg Glu Glu			
	740	745	750	
	Arg Ile Ile Thr Gly Pro Glu Ile Lys Tyr Thr Arg Ile Ser Thr Gly			
	755	760	765	
	Gly Gly Glu Thr Glu Glu Thr Leu Lys Lys Leu Leu Gln Glu Glu Val			
15	770	775	780	
	Thr Lys Val Thr Lys Phe Ile Glu Gly Gly Asp Gly His Leu Phe Glu			
	785	790	795	800
	Asp Glu Glu Ile Lys Arg Leu Leu Gln Gly Asp Thr Pro Val Arg Lys			
	805	810	815	
20	Leu Gln Ala Asn Lys Lys Val Gln Gly Ser Arg Arg Arg Leu Arg Glu			
	820	825	830	
	Gly Arg Ser Gln			
	835			

<210> 54

<211> 687

<212> PRT

5 <213> Homo sapiens

<220>

<221> Protein-glutamine gamma-glutamyltransferase

<222> (1)...(687)

<223> Accession No. P21980

10 <400> 54

Met Ala Glu Glu Leu Val Leu Glu Arg Cys Asp Leu Glu Leu Glu Thr

1 5 10 15

Asn Gly Arg Asp His His Thr Ala Asp Leu Cys Arg Glu Lys Leu Val

15 20 25 30

Val Arg Arg Gly Gln Pro Phe Trp Leu Thr Leu His Phe Glu Gly Arg

35 40 45

Asn Tyr Glu Ala Ser Val Asp Ser Leu Thr Phe Ser Val Val Thr Gly

50 55 60

20 Pro Ala Pro Ser Gln Glu Ala Gly Thr Lys Ala Arg Phe Pro Leu Arg

65 70 75 80

Asp Ala Val Glu Glu Gly Asp Trp Thr Ala Thr Val Val Asp Gln Gln

85 90 95

Asp Cys Thr Leu Ser Leu Gln Leu Thr Thr Pro Ala Asn Ala Pro Ile

	100	105	110	
	Gly Leu Tyr Arg Leu Ser Leu Glu Ala Ser Thr Gly Tyr Gln Gly Ser			
	115	120	125	
	Ser Phe Val Leu Gly His Phe Ile Leu Leu Phe Asn Ala Trp Cys Pro			
5	130	135	140	
	Ala Asp Ala Val Tyr Leu Asp Ser Glu Glu Glu Arg Gln Glu Tyr Val			
	145	150	155	160
	Leu Thr Gln Gln Gly Phe Ile Tyr Gln Gly Ser Ala Lys Phe Ile Lys			
	165	170	175	
10	Asn Ile Pro Trp Asn Phe Gly Gln Phe Glu Asp Gly Ile Leu Asp Ile			
	180	185	190	
	Cys Leu Ile Leu Leu Asp Val Asn Pro Lys Phe Leu Lys Asn Ala Gly			
	195	200	205	
	Arg Asp Cys Ser Arg Arg Ser Ser Pro Val Tyr Val Gly Arg Val Val			
15	210	215	220	
	Ser Gly Met Val Asn Cys Asn Asp Asp Gln Gly Val Leu Leu Gly Arg			
	225	230	235	240
	Trp Asp Asn Asn Tyr Gly Asp Gly Val Ser Pro Met Ser Trp Ile Gly			
	245	250	255	
20	Ser Val Asp Ile Leu Arg Arg Trp Lys Asn His Gly Cys Gln Arg Val			
	260	265	270	
	Lys Tyr Gly Gln Cys Trp Val Phe Ala Ala Val Ala Cys Thr Val Leu			
	275	280	285	
	Arg Cys Leu Gly Ile Pro Thr Arg Val Val Thr Asn Tyr Asn Ser Ala			





	485	490	495	
	Asn Asn Thr Ala Glu Glu Tyr Val Cys Arg Leu Leu Leu Cys Ala Arg			
	500	505	510	
	Thr Val Ser Tyr Asn Gly Ile Leu Gly Pro Glu Cys Gly Thr Lys Tyr			
5	515	520	525	
	Leu Leu Asn Leu Asn Leu Glu Pro Phe Ser Glu Lys Ser Val Pro Leu			
	530	535	540	
	Cys Ile Leu Tyr Glu Lys Tyr Arg Asp Cys Leu Thr Glu Ser Asn Leu			
	545	550	555	560
10	Ile Lys Val Arg Ala Leu Leu Val Glu Pro Val Ile Asn Ser Tyr Leu			
	565	570	575	
	Leu Ala Glu Arg Asp Leu Tyr Leu Glu Asn Pro Glu Ile Lys Ile Arg			
	580	585	590	
	Ile Leu Gly Glu Pro Lys Gln Lys Arg Lys Leu Val Ala Glu Val Ser			
15	595	600	605	
	Leu Gln Asn Pro Leu Pro Val Ala Leu Glu Gly Cys Thr Phe Thr Val			
	610	615	620	
	Glu Gly Ala Gly Leu Thr Glu Glu Gln Lys Thr Val Glu Ile Pro Asp			
	625	630	635	640
20	Pro Val Glu Ala Gly Glu Glu Val Lys Val Arg Met Asp Leu Leu Pro			
	645	650	655	
	Leu His Met Gly Leu His Lys Leu Val Val Asn Phe Glu Ser Asp Lys			
	660	665	670	
	Leu Lys Ala Val Lys Gly Phe Arg Asn Val Ile Ile Gly Pro Ala			

675

680

685

<210> 55

5 <211> 204

<212> PRT

<213> Homo sapiens

<220>

<221> Rho GDP-dissociation inhibitor 1

10 <222> (1)..(204)

<223> Accession No. as of 10 Dec 2002: P52565

<400> 55

Met Ala Glu Gln Glu Pro Thr Ala Glu Gln Leu Ala Gln Ile Ala Ala

15 1 5 10 15

Glu Asn Glu Glu Asp Glu His Ser Val Asn Tyr Lys Pro Pro Ala Gln

20 25 30

Lys Ser Ile Gln Glu Ile Gln Glu Leu Asp Lys Asp Asp Glu Ser Leu

35 40 45

20 Arg Lys Tyr Lys Glu Ala Leu Leu Gly Arg Val Ala Val Ser Ala Asp

50 55 60

Pro Asn Val Pro Asn Val Val Val Thr Gly Leu Thr Leu Val Cys Ser

65 70 75 80

Ser Ala Pro Gly Pro Leu Glu Leu Asp Leu Thr Gly Asp Leu Glu Ser

	85	90	95	
	Phe Lys Lys Gln Ser Phe Val Leu Lys Glu Gly Val Glu Tyr Arg Ile			
	100	105	110	
	Lys Ile Ser Phe Arg Val Asn Arg Glu Ile Val Ser Gly Met Lys Tyr			
5	115	120	125	
	Ile Gln His Thr Tyr Arg Lys Gly Val Lys Ile Asp Lys Thr Asp Tyr			
	130	135	140	
	Met Val Gly Ser Tyr Gly Pro Arg Ala Glu Glu Tyr Glu Phe Leu Thr			
	145	150	155	160
10	Pro Val Glu Glu Ala Pro Lys Gly Met Leu Ala Arg Gly Ser Tyr Ser			
	165	170	175	
	Ile Lys Ser Arg Phe Thr Asp Asp Asp Lys Thr Asp His Leu Ser Trp			
	180	185	190	
	Glu Trp Asn Leu Thr Ile Lys Lys Asp Trp Lys Asp			
15	195	200		

<210> 56

<211> 492

20 <212> PRT

<213> Homo sapiens

<220>

<221> Fascin 2

<222> (1) .. (492)

<223> Accession No. as of 29 August 2003: 014926

<400> 56

Met Pro Thr Asn Gly Leu His Gln Val Leu Lys Ile Gln Phe Gly Leu  
5 1 5 10 15  
Val Asn Asp Thr Asp Arg Tyr Leu Thr Ala Glu Ser Phe Gly Phe Lys  
20 25 30  
Val Asn Ala Ser Ala Pro Ser Leu Lys Arg Lys Gln Thr Trp Val Leu  
35 40 45  
10 Glu Pro Asp Pro Gly Gln Gly Thr Ala Val Leu Leu Arg Ser Ser His  
50 55 60  
Leu Gly Arg Tyr Leu Ser Ala Glu Glu Asp Gly Arg Val Ala Cys Glu  
65 70 75 80  
Ala Glu Gln Pro Gly Arg Asp Cys Arg Phe Leu Val Leu Pro Gln Pro  
15 85 90 95  
Asp Gly Arg Trp Val Leu Arg Ser Glu Pro His Gly Arg Phe Phe Gly  
100 105 110  
Gly Thr Glu Asp Gln Leu Ser Cys Phe Ala Thr Ala Val Ser Pro Ala  
115 120 125  
20 Glu Leu Trp Thr Val His Leu Ala Ile His Pro Gln Ala His Leu Leu  
130 135 140  
Ser Val Ser Arg Arg Arg Tyr Val His Leu Cys Pro Arg Glu Asp Glu  
145 150 155 160  
Met Ala Ala Asp Gly Asp Lys Pro Trp Gly Val Asp Ala Leu Leu Thr

	165	170	175
	Leu Ile Phe Arg Ser Arg Arg Tyr Cys Leu Lys Ser Cys Asp Ser Arg		
	180	185	190
	Tyr Leu Arg Ser Asp Gly Arg Leu Val Trp Glu Pro Glu Pro Arg Ala		
5	195	200	205
	Cys Tyr Thr Leu Glu Phe Lys Ala Gly Lys Leu Ala Phe Lys Asp Cys		
	210	215	220
	Asp Gly His Tyr Leu Ala Pro Val Gly Pro Ala Gly Thr Leu Lys Ala		
	225	230	235 240
10	Gly Arg Asn Thr Arg Pro Gly Lys Asp Glu Leu Phe Asp Leu Glu Glu		
	245	250	255
	Ser His Pro Gln Val Val Leu Val Ala Ala Asn His Arg Tyr Val Ser		
	260	265	270
	Val Arg Gln Gly Val Asn Val Ser Ala Asn Gln Asp Asp Glu Leu Asp		
15	275	280	285
	His Glu Thr Phe Leu Met Gln Ile Asp Gln Glu Thr Lys Lys Cys Thr		
	290	295	300
	Phe Tyr Ser Ser Thr Gly Gly Tyr Trp Thr Leu Val Thr His Gly Gly		
	305	310	315 320
20	Ile His Ala Thr Ala Thr Gln Val Ser Ala Asn Thr Met Phe Glu Met		
	325	330	335
	Glu Trp Arg Gly Arg Arg Val Ala Leu Lys Ala Ser Asn Gly Arg Tyr		
	340	345	350
	Val Cys Met Lys Lys Asn Gly Gln Leu Ala Ala Ile Ser Asp Phe Val		

355 360 365  
Gly Lys Asp Glu Glu Phe Thr Leu Lys Leu Ile Asn Arg Pro Ile Leu  
370 375 380  
Val Leu Arg Gly Leu Asp Gly Phe Val Cys His His Arg Gly Ser Asn  
5 385 390 395 400  
Gln Leu Asp Thr Asn Arg Ser Val Tyr Asp Val Phe His Leu Ser Phe  
405 410 415  
Ser Asp Gly Ala Tyr Arg Ile Arg Gly Arg Asp Gly Gly Phe Trp Tyr  
420 425 430  
10 Thr Gly Ser His Gly Ser Val Cys Ser Asp Gly Glu Arg Ala Glu Asp  
435 440 445  
Phe Val Phe Glu Phe Arg Glu Arg Gly Arg Leu Ala Ile Arg Ala Arg  
450 455 460  
Ser Gly Lys Tyr Leu Arg Gly Gly Ala Ser Gly Leu Leu Arg Ala Asp  
15 465 470 475 480  
Ala Asp Ala Pro Ala Gly Thr Ala Leu Trp Glu Tyr  
485 490

20 <210> 57  
<211> 165  
<212> PRT  
<213> Homo sapiens  
<220>

<221> Destrin' (Actin-depolymerizing factor) (ADF)

<222> (1)..(165)

<223> Accession No. as of 29 August 2003: P18282

<400> 57

5

Met Ala Ser Gly Val Gln Val Ala Asp Glu Val Cys Arg Ile Phe Tyr

1 5 10 15

Asp Met Lys Val Arg Lys Cys Ser Thr Pro Glu Glu Ile Lys Lys Arg

20 25 30

10 Lys Lys Ala Val Ile Phe Cys Leu Ser Ala Asp Lys Lys Cys Ile Ile

35 40 45

Val Glu Glu Gly Lys Glu Ile Leu Val Gly Asp Val Gly Val Thr Ile

50 55 60

Thr Asp Pro Phe Lys His Phe Val Gly Met Leu Pro Glu Lys Asp Cys

15 65 70 75 80

Arg Tyr Ala Leu Tyr Asp Ala Ser Phe Glu Thr Lys Glu Ser Arg Lys

85 90 95

Glu Glu Leu Met Phe Phe Leu Trp Ala Pro Glu Leu Ala Pro Leu Lys

100 105 110

20 Ser Lys Met Ile Tyr Ala Ser Ser Lys Asp Ala Ile Lys Lys Lys Phe

115 120 125

Gln Gly Ile Lys His Glu Cys Gln Ala Asn Gly Pro Glu Asp Leu Asn

130 135 140

Arg Ala Cys Ile Ala Glu Lys Leu Gly Gly Ser Leu Ile Val Ala Phe

145 150 155 160

Glu Gly Cys Pro Val

165

5

<210> 58

<211> 492

<212> PRT

<213> Homo sapiens

10 <220>

<221> Fascin

<222> (1)..(492)

<223> Accession No. as of 29 August 2003: Q16658

<400> 58

15

Thr Ala Asn Gly Thr Ala Glu Ala Val Gln Ile Gln Phe Gly Leu Ile

1 5 10 15

Asn Cys Gly Asn Lys Tyr Leu Thr Ala Glu Ala Phe Gly Phe Lys Val

20 25 30

20 Asn Ala Ser Ala Ser Ser Leu Lys Lys Lys Gln Ile Trp Thr Leu Glu

35 40 45

Gln Pro Pro Asp Glu Ala Gly Ser Ala Ala Val Cys Leu Arg Ser His

50 55 60

Leu Gly Arg Tyr Leu Ala Ala Asp Lys Asp Gly Asn Val Thr Cys Glu



65	70	75	80
Arg Glu Val Pro Gly Pro Asp Cys Arg Phe Leu Ile Val Ala His Asp			
	85	90	95
Asp Gly Arg Trp Ser Leu Gln Ser Glu Ala His Arg Arg Tyr Phe Gly			
5	100	105	110
Gly Thr Glu Asp Arg Leu Ser Cys Phe Ala Gln Thr Val Ser Pro Ala			
	115	120	125
Glu Lys Trp Ser Val His Ile Ala Met His Pro Gln Val Asn Ile Tyr			
	130	135	140
10	Ser Val Thr Arg Lys Arg Tyr Ala His Leu Ser Ala Arg Pro Ala Asp		
	145	150	155
	160		
Glu Ile Ala Val Asp Arg Asp Val Pro Trp Gly Val Asp Ser Leu Ile			
	165	170	175
Thr Leu Ala Phe Gln Asp Gln Arg Tyr Ser Val Gln Thr Ala Asp His			
15	180	185	190
Arg Phe Leu Arg His Asp Gly Arg Leu Val Ala Arg Pro Glu Pro Ala			
	195	200	205
Thr Gly Tyr Thr Leu Glu Phe Arg Ser Gly Lys Val Ala Phe Arg Asp			
	210	215	220
20	Cys Glu Gly Arg Tyr Leu Ala Pro Ser Gly Pro Ser Gly Thr Leu Lys		
	225	230	235
	240		
Ala Gly Lys Ala Thr Lys Val Gly Lys Asp Glu Leu Phe Ala Leu Glu			
	245	250	255
Gln Ser Cys Ala Gln Val Val Leu Gln Ala Ala Asn Glu Arg Asn Val			

	260	265	270	
	Ser Thr Arg Gln Gly Met Asp Leu Ser Ala Asn Gln Asp Glu Glu Thr			
	275	280	285	
	Asp Gln Glu Thr Phe Gln Leu Glu Ile Asp Arg Asp Thr Lys Lys Cys			
5	290	295	300	
	Ala Phe Arg Thr His Thr Gly Lys Tyr Trp Thr Leu Thr Ala Thr Gly			
	305	310	315	320
	Gly Val Gln Ser Thr Ala Ser Ser Lys Asn Ala Ser Cys Tyr Phe Asp			
	325	330	335	
10	Ile Glu Trp Arg Asp Arg Arg Ile Thr Leu Arg Ala Ser Asn Gly Lys			
	340	345	350	
	Phe Val Thr Ser Lys Lys Asn Gly Gln Leu Ala Ala Ser Val Glu Thr			
	355	360	365	
	Ala Gly Asp Ser Glu Leu Phe Leu Met Lys Leu Ile Asn Arg Pro Ile			
15	370	375	380	
	Ile Val Phe Arg Gly Glu His Gly Phe Ile Gly Cys Arg Lys Val Thr			
	385	390	395	400
	Gly Thr Leu Asp Ala Asn Arg Ser Ser Tyr Asp Val Phe Gln Leu Glu			
	405	410	415	
20	Phe Asn Asp Gly Ala Tyr Asn Ile Lys Asp Ser Thr Gly Lys Tyr Trp			
	420	425	430	
	Thr Val Gly Ser Asp Ser Ala Val Thr Ser Ser Gly Asp Thr Pro Val			
	435	440	445	
	Asp Phe Phe Phe Glu Phe Cys Asp Tyr Asn Lys Val Ala Ile Lys Val			

450 455 460  
Gly Gly Arg Tyr Leu Lys Gly Asp His Ala Gly Val Leu Lys Ala Ser  
465 470 475 480  
Ala Glu Thr Val Asp Pro Ala Ser Leu Trp Glu Tyr  
5 485 490

<210> 59  
<211> 317  
10 <212> PRT  
<213> Homo sapiens  
<220>  
<221> Apo-E precursor  
<222> (1)..(317)  
15 <223> Accession No. as of 29 August 2003: P02649  
<400> 59

Met Lys Val Leu Trp Ala Ala Leu Leu Val Thr Phe Leu Ala Gly Cys  
1 5 10 15  
20 Gln Ala Lys Val Glu Gln Ala Val Glu Thr Glu Pro Glu Pro Glu Leu  
20 25 30  
Arg Gln Gln Thr Glu Trp Gln Ser Gly Gln Arg Trp Glu Leu Ala Leu  
35 40 45  
Gly Arg Phe Trp Asp Tyr Leu Arg Trp Val Gln Thr Leu Ser Glu Gln

	50	55	60
	Val Gln Glu Glu Leu Leu Ser Ser Gln Val Thr Gln Glu Leu Arg Ala		
	65	70	75 80
	Leu Met Asp Glu Thr Met Lys Glu Leu Lys Ala Tyr Lys Ser Glu Leu		
5	85	90	95
	Glu Glu Gln Leu Thr Pro Val Ala Glu Glu Thr Arg Ala Arg Leu Ser		
	100	105	110
	Lys Glu Leu Gln Ala Ala Gln Ala Arg Leu Gly Ala Asp Met Glu Asp		
	115	120	125
10	Val Cys Gly Arg Leu Val Gln Tyr Arg Gly Glu Val Gln Ala Met Leu		
	130	135	140
	Gly Gln Ser Thr Glu Glu Leu Arg Val Arg Leu Ala Ser His Leu Arg		
	145	150	155 160
	Lys Leu Arg Lys Arg Leu Leu Arg Asp Ala Asp Asp Leu Gln Lys Arg		
15	165	170	175
	Leu Ala Val Tyr Gln Ala Gly Ala Arg Glu Gly Ala Glu Arg Gly Leu		
	180	185	190
	Ser Ala Ile Arg Glu Arg Leu Gly Pro Leu Val Glu Gln Gly Arg Val		
	195	200	205
20	Arg Ala Ala Thr Val Gly Ser Leu Ala Gly Gln Pro Leu Gln Glu Arg		
	210	215	220
	Ala Gln Ala Trp Gly Glu Arg Leu Arg Ala Arg Met Glu Glu Met Gly		
	225	230	235 240
	Ser Arg Thr Arg Asp Arg Leu Asp Glu Val Lys Glu Gln Val Ala Glu		

270

285

300

315

15

Gly Thr Val Thr Val Arg Tyr Ala Pro Ser Glu Ala Gly Leu His Glu

	20		25		30
	Met Asp Ile Arg Tyr Asp Asn Met His Ile Pro Gly Ser Pro Leu Gln				
	35		40		45
	Phe Tyr Val Asp Tyr Val Asn Cys Gly His Val Thr Ala Tyr Gly Pro				
5	50		55		60
	Gly Leu Thr His Gly Val Val Asn Lys Pro Ala Thr Phe Thr Val Asn				
	65		70		75
	Thr Lys Asp Ala Gly Glu Gly Gly Leu Ser Leu Ala Ile Glu Gly Pro				
		85		90	
10	Ser Lys Ala Glu Ile Ser Cys Thr Asp Asn Gln Asp Gly Thr Cys Ser				
	100		105		110
	Val Ser Tyr Leu Pro Val Leu Pro Gly Asp Tyr Ser Ile Leu Val Lys				
	115		120		125
	Tyr Asn Glu Gln His Val Pro Gly Ser Pro Phe Thr Ala Arg Val Thr				
15	130		135		140
	Gly Asp Asp Ser Met Arg Met Ser His Leu Lys Val Gly Ser Ala Ala				
	145		150		155
	Asp Ile Pro Ile Asn Ile Ser Glu Thr Asp Leu Ser Leu Leu Thr Ala				
		165		170	
20	Thr Val Val Pro Pro Ser Gly Arg Glu Glu Pro Cys Leu Leu Lys Arg				
	180		185		190
	Leu Arg Asn Gly His Val Gly Ile Ser Phe Val Pro Lys Glu Thr Gly				
	195		200		205
	Glu His Leu Val His Val Lys Lys Asn Gly Gln His Val Ala Ser Ser				

210	215	220	
Pro Ile Pro Val Val Ile Ser Gln Ser Glu Ile Gly Asp Ala Ser Arg			
225	230	235	240
Val Arg Val Ser Gly Gln Gly Leu His Glu Gly His Thr Phe Glu Pro			
5	245	250	255
Ala Glu Phe Ile Ile Asp Thr Arg Asp Ala Gly Tyr Gly Gly Leu Ser			
	260	265	270
Leu Ser Ile Glu Gly Pro Ser Lys Val Asp Ile Asn Thr Glu Asp Leu			
	275	280	285
10	Glu Asp Gly Thr Cys Arg Val Thr Tyr Cys Pro Thr Glu Pro Gly Asn		
	290	295	300
Tyr Ile Ile Asn Ile Lys Phe Ala Asp Gln His Val Pro Gly Ser Pro			
	305	310	315
	Phe Ser Val Lys Val Thr Gly Glu Gly Arg Val Lys Glu Ser Ile Thr		
15	325	330	335
Arg Arg Arg Arg Ala Pro Ser Val Ala Asn Val Gly Ser His Cys Asp			
	340	345	350
Leu Ser Leu Lys Ile Pro Glu Ile Ser Ile Gln Asp Met Thr Ala Gln			
	355	360	365
20	Val Thr Ser Pro Ser Gly Lys Thr His Glu Ala Glu Ile Val Glu Gly		
	370	375	380
Glu Asn His Thr Tyr Cys Ile Arg Phe Val Pro Ala Glu Met Gly Thr			
	385	390	395
	His Thr Val Ser Val Lys Tyr Lys Gly Gln His Val Pro Gly Ser Pro		
		400	

	405	410	415
	Phe Gln Phe Thr Val Gly Pro Leu Gly Glu Gly Gly Ala His Lys Val		
	420	425	430
	Arg Ala Gly Gly Pro Gly Leu Glu Arg Ala Glu Ala Gly Val Pro Ala		
5	435	440	445
	Glu Phe Ser Ile Trp Thr Arg Glu Ala Gly Ala Gly Gly Leu Ala Ile		
	450	455	460
	Ala Val Glu Gly Pro Ser Lys Ala Glu Ile Ser Phe Glu Asp Arg Lys		
	465	470	475 480
10	Asp Gly Ser Cys Gly Val Ala Tyr Val Val Gln Glu Pro Gly Asp Tyr		
	485	490	495
	Glu Val Ser Val Lys Phe Asn Glu Glu His Ile Pro Asp Ser Pro Phe		
	500	505	510
	Val Val Pro Val Ala Ser Pro Ser Gly Asp Ala Arg Arg Leu Thr Val		
15	515	520	525
	Ser Ser Leu Gln Glu Ser Gly Leu Lys Val Asn Gln Pro Ala Ser Phe		
	530	535	540
	Ala Val Ser Leu Asn Gly Ala Lys Gly Ala Ile Asp Ala Lys Val His		
	545	550	555 560
20	Ser Pro Ser Gly Ala Leu Glu Glu Cys Tyr Val Thr Glu Ile Asp Gln		
	565	570	575
	Asp Lys Tyr Ala Val Arg Phe Ile Pro Arg Glu Asn Gly Val Tyr Leu		
	580	585	590
	Ile Asp Val Lys Phe Asn Gly Thr His Ile Pro Gly Ser Pro Phe Lys		



	595	600	605
Ile Arg Val Gly Glu Pro Gly His Gly Gly Asp Pro Gly Leu Val Ser			
610	615	620	
Ala Tyr Gly Ala Gly Leu Glu Gly Gly Val Thr Gly Asn Pro Ala Glu			
5 625	630	635	640
Phe Val Val Asn Thr Ser Asn Ala Gly Ala Gly Ala Leu Ser Val Thr			
645	650	655	
Ile Asp Gly Pro Ser Lys Val Lys Met Asp Cys Gln Glu Cys Pro Glu			
660	665	670	
10 Gly Tyr Arg Val Thr Tyr Thr Pro Met Ala Pro Gly Ser Tyr Leu Ile			
675	680	685	
Ser Ile Lys Tyr Gly Gly Pro Tyr His Ile Gly Gly Ser Pro Phe Lys			
690	695	700	
Ala Lys Val Thr Gly Pro Arg Leu Val Ser Asn His Ser Leu His Glu			
15 705	710	715	720
Thr Ser Ser Val Phe Val Asp Ser Leu Thr Lys Ala Thr Cys Ala Pro			
725	730	735	
Gln His Gly Ala Pro Gly Pro Gly Pro Ala Asp Ala Ser Lys Val Val			
740	745	750	
20 Ala Lys Gly Leu Gly Leu Ser Lys Ala Tyr Val Gly Gln Lys Ser Ser			
755	760	765	
Phe Thr Val Asp Cys Ser Lys Ala Gly Asn Asn Met Leu Leu Val Gly			
770	775	780	
Val His Gly Pro Arg Thr Pro Cys Glu Glu Ile Leu Val Lys His Val			

- 220 -

785                      790                      795                      800

Gly Ser Arg Leu Tyr Ser Val Ser Tyr Leu Leu Lys Asp Lys Gly Glu

805

810

815

Tyr Thr Leu Val Val Lys Trp Gly Asp Glu His Ile Pro Gly Ser Pro

5

820

825

830

Tyr Arg Val Val Val Pro

835

10 <210> 61

<211> 433

<212> PRT

<213> Homo sapiens

<220>

15 <221> human alpha enolase

<222> (1)..(433)

<223> Accession No. as of 29 August 2003: P06733

<400> 61

20 Ser Ile Leu Lys Ile His Ala Arg Glu Ile Phe Asp Ser Arg Gly Asn

1

5

10

15

Pro Thr Val Glu Val Asp Leu Phe Thr Ser Lys Gly Leu Phe Arg Ala

20

25

30

Ala Val Pro Ser Gly Ala Ser Thr Gly Ile Tyr Glu Ala Leu Glu Leu



225	230	235	240
Ile Gly Met Asp Val Ala Ala Ser Glu Phe Phe Arg Ser Gly Lys Tyr			
	245	250	255
Asp Leu Asp Phe Lys Ser Pro Asp Asp Pro Ser Arg Tyr Ile Ser Pro			
5	260	265	270
Asp Gln Leu Ala Asp Leu Tyr Lys Ser Phe Ile Lys Asp Tyr Pro Val			
	275	280	285
Val Ser Ile Glu Asp Pro Phe Asp Gln Asp Asp Trp Gly Ala Trp Gln			
	290	295	300
10	Lys Phe Thr Ala Ser Ala Gly Ile Gln Val Val Gly Asp Asp Leu Thr		
	305	310	315
	320		
Val Thr Asn Pro Lys Arg Ile Ala Lys Ala Val Asn Glu Lys Ser Cys			
	325	330	335
Asn Cys Leu Leu Leu Lys Val Asn Gln Ile Gly Ser Val Thr Glu Ser			
15	340	345	350
Leu Gln Ala Cys Lys Leu Ala Gln Ala Asn Gly Trp Gly Val Met Val			
	355	360	365
Ser His Arg Ser Gly Glu Thr Glu Asp Thr Phe Ile Ala Asp Leu Val			
	370	375	380
20	Val Gly Leu Cys Thr Gly Gln Ile Lys Thr Gly Ala Pro Cys Arg Ser		
	385	390	395
	400		
Glu Arg Leu Ala Lys Tyr Asn Gln Leu Leu Arg Ile Glu Glu Glu Leu			
	405	410	415
Gly Ser Lys Ala Lys Phe Ala Gly Arg Asn Phe Arg Asn Pro Leu Ala			

420

425

430

Lys

5

<210> 62

<211> 471

<212> PRT

<213> Homo sapiens

10 <220>

<221> tryptophanyl-tRNA synthetase

<222> (1)..(471)

<223> Accession No. as of 29 August 2003: P23381

<400> 62

15

Met Pro Asn Ser Glu Pro Ala Ser Leu Leu Glu Leu Phe Asn Ser Ile

1 5 10 15

Ala Thr Gln Gly Glu Leu Val Arg Ser Leu Lys Ala Gly Asn Ala Ser

20 25 30

20 Lys Asp Glu Ile Asp Ser Ala Val Lys Met Leu Val Ser Leu Lys Met

35 40 45

Ser Tyr Lys Ala Ala Ala Gly Glu Asp Tyr Lys Ala Asp Cys Pro Pro

50 55 60

Gly Asn Pro Ala Pro Thr Ser Asn His Gly Pro Asp Ala Thr Glu Ala

65	70	75	80
Glu Glu Asp Phe Val Asp Pro Trp Thr Val Gln Thr Ser Ser Ala Lys			
	85	90	95
Gly Ile Asp Tyr Asp Lys Leu Ile Val Arg Phe Gly Ser Ser Lys Ile			
5	100	105	110
Asp Lys Glu Leu Ile Asn Arg Ile Glu Arg Ala Thr Gly Gln Arg Pro			
	115	120	125
His His Phe Leu Arg Arg Gly Ile Phe Phe Ser His Arg Asp Met Asn			
	130	135	140
10	Gln Val Leu Asp Ala Tyr Glu Asn Lys Lys Pro Phe Tyr Leu Tyr Thr		
	145	150	155
	160		
Gly Arg Gly Pro Ser Ser Glu Ala Met His Val Gly His Leu Ile Pro			
	165	170	175
Phe Ile Phe Thr Lys Trp Leu Gln Asp Val Phe Asn Val Pro Leu Val			
15	180	185	190
Ile Gln Met Thr Asp Asp Glu Lys Tyr Leu Trp Lys Asp Leu Thr Leu			
	195	200	205
Asp Gln Ala Tyr Ser Tyr Ala Val Glu Asn Ala Lys Asp Ile Ile Ala			
	210	215	220
20	Cys Gly Phe Asp Ile Asn Lys Thr Phe Ile Phe Ser Asp Leu Asp Tyr		
	225	230	235
	240		
Met Gly Met Ser Ser Gly Phe Tyr Lys Asn Val Val Lys Ile Gln Lys			
	245	250	255
His Val Thr Phe Asn Gln Val Lys Gly Ile Phe Gly Phe Thr Asp Ser			

	260	265	270
	Asp Cys Ile Gly Lys Ile Ser Phe Pro Ala Ile Gln Ala Ala Pro Ser		
	275	280	285
	Phe Ser Asn Ser Phe Pro Gln Ile Phe Arg Asp Arg Thr Asp Ile Gln		
5	290	295	300
	Cys Leu Ile Pro Cys Ala Ile Asp Gln Asp Pro Tyr Phe Arg Met Thr		
	305	310	315
	Arg Asp Val Ala Pro Arg Ile Gly Tyr Pro Lys Pro Ala Leu Leu His		
	325	330	335
10	Ser Thr Phe Phe Pro Ala Leu Gln Gly Ala Gln Thr Lys Met Ser Ala		
	340	345	350
	Ser Asp Pro Asn Ser Ser Ile Phe Leu Thr Asp Thr Ala Lys Gln Ile		
	355	360	365
	Lys Thr Lys Val Asn Lys His Ala Phe Ser Gly Gly Arg Asp Thr Ile		
15	370	375	380
	Glu Glu His Arg Gln Phe Gly Gly Asn Cys Asp Val Asp Val Ser Phe		
	385	390	395
	Met Tyr Leu Thr Phe Phe Leu Glu Asp Asp Asp Lys Leu Glu Gln Ile		
	405	410	415
20	Arg Lys Asp Tyr Thr Ser Gly Ala Met Leu Thr Gly Glu Leu Lys Lys		
	420	425	430
	Ala Leu Ile Glu Val Leu Gln Pro Leu Ile Ala Glu His Gln Ala Arg		
	435	440	445
	Arg Lys Glu Val Thr Asp Glu Ile Val Lys Glu Phe Met Thr Pro Arg		

450 455 460

Lys Leu Ser Phe Asp Phe Gln

465 470

5

<210> 63

<211> 106

<212> PRT

<213> Homo sapiens

10 <220>

<221> Ig kappa chain C regionI

<222> (1)..(106)

<223> Accession No. as of 29 August 2003: P01834

<400> 63

15

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln

1 5 10 15

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr

20 20 25 30

20 Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser

35 40 45

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr

50 55 60

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys



65                                      70                                      75                                      80  
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro

85                                      90                                      95  
Val Thr Lys Ser Phe Asn Arg Gly Glu Cys

5                                      100                                      105

<210> 64

<211> 758

10 <212> PRT

<213> Homo sapiens

<220>

<221> Mitofilin

<222> (1)..(758)

15 <223> Accession No. as of 29 August 2003: Q16891

<400> 64

Met Leu Arg Ala Cys Gln Leu Ser Gly Val Thr Ala Ala Ala Gln Ser

1                                      5                                      10                                      15

20 Cys Leu Cys Gly Lys Phe Val Leu Arg Pro Leu Arg Pro Cys Arg Arg

20                                      25                                      30

Tyr Ser Thr Ser Gly Ser Ser Gly Leu Thr Thr Gly Lys Ile Ala Gly

35                                      40                                      45

Ala Gly Leu Leu Phe Val Gly Gly Gly Ile Gly Gly Thr Ile Leu Tyr

[illegible]

	245	250	255
	Lys Ala Ala Met Asp Asn Ser Glu Ile Ala Gly Glu Lys Lys Ser Ala		
	260	265	270
	Gln Trp Arg Thr Val Glu Gly Ala Leu Lys Glu Arg Arg Lys Ala Val		
5	275	280	285
	Asp Glu Ala Ala Asp Ala Leu Leu Lys Ala Lys Glu Glu Leu Glu Lys		
	290	295	300
	Met Lys Ser Val Ile Glu Asn Ala Lys Lys Lys Glu Val Ala Gly Ala		
	305	310	315 320
10	Lys Pro His Ile Thr Ala Ala Glu Gly Lys Leu His Asn Met Ile Val		
	325	330	335
	Asp Leu Asp Asn Val Val Lys Lys Val Gln Ala Ala Gln Ser Glu Ala		
	340	345	350
	Lys Val Val Ser Gln Tyr His Glu Leu Val Val Gln Ala Arg Asp Asp		
15	355	360	365
	Phe Lys Arg Glu Leu Asp Ser Ile Thr Pro Glu Val Leu Pro Gly Trp		
	370	375	380
	Lys Gly Met Ser Val Ser Asp Leu Ala Asp Lys Leu Ser Thr Asp Asp		
	385	390	395 400
20	Leu Asn Ser Leu Ile Ala His Ala His Arg Arg Ile Asp Gln Leu Asn		
	405	410	415
	Arg Glu Leu Ala Glu Gln Lys Ala Thr Glu Lys Gln His Ile Thr Leu		
	420	425	430
	Ala Leu Glu Lys Gln Lys Leu Glu Glu Lys Arg Ala Phe Asp Ser Ala		



625                      630                      635                      640  
Leu Ala Arg Arg Val Ala Met Ile Asp Glu Thr Arg Asn Ser Leu Tyr  
                         645                      650                      655  
Gln Tyr Phe Leu Ser Tyr Leu Gln Ser Leu Leu Leu Phe Pro Pro Gln  
5                      660                      665                      670  
Gln Leu Lys Pro Pro Pro Glu Leu Cys Pro Glu Asp Ile Asn Thr Phe  
                         675                      680                      685  
Lys Leu Leu Ser Tyr Ala Ser Tyr Cys Ile Glu His Gly Asp Leu Glu  
                         690                      695                      700  
10 Leu Ala Ala Lys Phe Val Asn Gln Leu Lys Gly Glu Ser Arg Arg Val  
705                      710                      715                      720  
Ala Gln Asp Trp Leu Lys Glu Ala Arg Met Thr Leu Glu Thr Lys Gln  
                         725                      730                      735  
Ile Val Glu Ile Leu Thr Ala Tyr Ala Ser Ala Val Gly Ile Gly Thr  
15                      740                      745                      750  
Thr Gln Val Gln Pro Glu  
                         755

20 <210> 65

<211> 1410

<212> PRT

<213> Homo sapiens

<220>

<221> Ribosome-binding protein 1

<222> (1)..(1410)

<223> Accession No. as of 29 August 2003: O75300

<400> 65

5

Met Asp Ile Tyr Asp Thr Gln Thr Leu Gly Val Val Val Phe Gly Gly

1 5 10 15

Phe Met Val Val Ser Ala Ile Gly Ile Phe Leu Val Ser Thr Phe Ser

20 25 30

10 Met Lys Glu Thr Ser Tyr Glu Glu Ala Leu Ala Asn Gln Arg Lys Glu

35 40 45

Met Ala Lys Thr His His Gln Lys Val Glu Lys Lys Lys Lys Glu Lys

50 55 60

Thr Val Glu Lys Lys Gly Lys Thr Lys Lys Lys Glu Glu Lys Pro Asn

15 65 70 75 80

Gly Lys Ile Pro Asp His Asp Pro Ala Pro Asn Val Thr Val Leu Leu

85 90 95

Arg Glu Pro Val Arg Ala Pro Ala Val Ala Val Ala Pro Thr Pro Val

100 105 110

20 Gln Pro Pro Ile Ile Val Ala Pro Val Ala Thr Val Pro Ala Met Pro

115 120 125

Gln Glu Lys Leu Ala Ser Ser Pro Lys Asp Lys Lys Lys Lys Glu Lys

130 135 140

Lys Val Ala Lys Val Glu Pro Ala Val Ser Ser Val Val Asn Ser Ile

145	150	155	160
Gln Val Leu Thr Ser Lys Ala Ala Ile Leu Glu Thr Ala Pro Lys Glu			
	165	170	175
Val Pro Met Val Val Val Pro Pro Val Gly Ala Lys Gly Asn Thr Pro			
5	180	185	190
Ala Thr Gly Thr Thr Gln Gly Lys Lys Ala Glu Gly Thr Gln Asn Gln			
	195	200	205
Ser Lys Lys Ala Glu Gly Ala Pro Asn Gln Gly Arg Lys Ala Glu Gly			
	210	215	220
10	Thr Pro Asn Gln Gly Lys Lys Thr Glu Gly Thr Pro Asn Gln Gly Lys		
	225	230	235 240
Lys Ala Glu Gly Thr Pro Asn Gln Gly Lys Lys Ala Glu Gly Thr Pro			
	245	250	255
Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln Gly Lys Lys Val			
15	260	265	270
Asp Thr Thr Pro Asn Gln Gly Lys Lys Val Glu Gly Ala Pro Thr Gln			
	275	280	285
Gly Arg Lys Ala Glu Gly Ala Gln Asn Gln Ala Lys Lys Val Glu Gly			
	290	295	300
20	Ala Gln Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln Gly Lys		
	305	310	315 320
Lys Gly Glu Gly Ala Gln Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln			
	325	330	335
Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln Gly Lys Lys Ala			

	340	345	350	
	Glu Gly Ala Gln Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln			
	355	360	365	
	Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln Gly Lys Lys Ser Glu Gly			
5	370	375	380	
	Ala Gln Asn Gln Gly Lys Lys Val Glu Gly Ala Gln Asn Gln Gly Lys			
	385	390	395	400
	Lys Ala Glu Gly Ala Gln Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln			
	405	410	415	
10	Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln Gly Lys Lys Ala			
	420	425	430	
	Glu Gly Ala Gln Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln			
	435	440	445	
	Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln Gly Lys Lys Ala Glu Gly			
15	450	455	460	
	Ala Gln Asn Gln Gly Lys Lys Val Glu Gly Ala Gln Asn Gln Gly Lys			
	465	470	475	480
	Lys Ala Glu Gly Ala Gln Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln			
	485	490	495	
20	Asn Gln Gly Lys Lys Ala Glu Gly Ala Gln Asn Gln Gly Gln Lys Gly			
	500	505	510	
	Glu Gly Ala Gln Asn Gln Gly Lys Lys Thr Glu Gly Ala Gln Gly Lys			
	515	520	525	
	Lys Ala Glu Arg Ser Pro Asn Gln Gly Lys Lys Gly Glu Gly Ala Pro			



	530		535		540														
	Ile	Gln	Gly	Lys	Lys	Ala	Asp	Ser	Val	Ala	Asn	Gln	Gly	Thr	Lys	Val			
	545					550					555					560			
	Glu	Gly	Ile	Thr	Asn	Gln	Gly	Lys	Lys	Ala	Glu	Gly	Ser	Pro	Ser	Glu			
5					565					570						575			
	Gly	Lys	Lys	Ala	Glu	Gly	Ser	Pro	Asn	Gln	Gly	Lys	Lys	Ala	Asp	Ala			
				580					585					590					
	Ala	Ala	Asn	Gln	Gly	Lys	Lys	Thr	Glu	Ser	Ala	Ser	Val	Gln	Gly	Arg			
			595					600					605						
10	Asn	Thr	Asp	Val	Ala	Gln	Ser	Pro	Glu	Ala	Pro	Lys	Gln	Glu	Ala	Pro			
		610					615						620						
	Ala	Lys	Lys	Lys	Ser	Gly	Ser	Lys	Lys	Lys	Gly	Glu	Pro	Gly	Pro	Pro			
	625				630						635					640			
	Asp	Ala	Asp	Gly	Pro	Leu	Tyr	Leu	Pro	Tyr	Lys	Thr	Leu	Val	Ser	Thr			
15				645						650						655			
	Val	Gly	Ser	Met	Val	Phe	Asn	Glu	Gly	Glu	Ala	Gln	Arg	Leu	Ile	Glu			
				660						665				670					
	Ile	Leu	Ser	Glu	Lys	Ala	Gly	Ile	Ile	Gln	Asp	Thr	Trp	His	Lys	Ala			
				675					680					685					
20	Thr	Gln	Lys	Gly	Asp	Pro	Val	Ala	Ile	Leu	Lys	Arg	Gln	Leu	Glu	Glu			
		690						695					700						
	Lys	Glu	Lys	Leu	Leu	Ala	Thr	Glu	Gln	Glu	Asp	Ala	Ala	Val	Ala	Lys			
	705					710						715				720			
	Ser	Lys	Leu	Arg	Glu	Leu	Asn	Lys	Glu	Met	Ala	Ala	Glu	Lys	Ala	Lys			

	725	730	735	
	Ala Ala Ala Gly Glu Ala Lys Val Lys Lys Gln Leu Val Ala Arg Glu			
	740	745	750	
	Gln Glu Ile Thr Ala Val Gln Ala Arg Met Gln Ala Ser Tyr Arg Glu			
5	755	760	765	
	His Val Lys Glu Val Gln Gln Leu Gln Gly Lys Ile Arg Thr Leu Gln			
	770	775	780	
	Glu Gln Leu Glu Asn Gly Pro Asn Thr Gln Leu Ala Arg Leu Gln Gln			
	785	790	795	800
10	Glu Asn Ser Ile Leu Arg Asp Ala Leu Asn Gln Ala Thr Ser Gln Val			
	805	810	815	
	Glu Ser Lys Gln Asn Ala Glu Leu Ala Lys Leu Arg Gln Glu Leu Ser			
	820	825	830	
	Lys Val Ser Lys Glu Leu Val Glu Lys Ser Glu Ala Val Arg Gln Asp			
15	835	840	845	
	Glu Gln Gln Arg Lys Ala Leu Glu Ala Lys Ala Ala Ala Phe Glu Lys			
	850	855	860	
	Gln Val Leu Gln Leu Gln Ala Ser His Arg Glu Ser Glu Glu Ala Leu			
	865	870	875	880
20	Gln Lys Arg Leu Asp Glu Val Ser Arg Glu Leu Cys His Thr Gln Ser			
	885	890	895	
	Ser His Ala Ser Leu Arg Ala Asp Ala Glu Lys Ala Gln Glu Gln Gln			
	900	905	910	
	Gln Gln Met Ala Glu Leu His Ser Lys Leu Gln Ser Ser Glu Ala Glu			

	915		920		925	
	Val Arg Ser Lys Cys Glu Glu Leu Ser Gly Leu His Gly Gln Leu Gln					
	930		935		940	
	Glu Ala Arg Ala Glu Asn Ser Gln Leu Thr Glu Arg Ile Arg Ser Ile					
5	945		950		955	960
	Glu Ala Leu Leu Glu Ala Gly Gln Ala Arg Asp Ala Gln Asp Val Gln					
		965		970		975
	Ala Ser Gln Ala Glu Ala Asp Gln Gln Gln Thr Arg Leu Lys Glu Leu					
		980		985		990
10	Glu Ser Gln Val Ser Gly Leu Glu Lys Glu Ala Ile Glu Leu Arg Glu					
		995		1000		1005
	Ala Val Glu Gln Gln Lys Val Lys Asn Asn Asp Leu Arg Glu Lys					
		1010		1015		1020
	Asn Trp Lys Ala Met Glu Ala Leu Ala Thr Ala Glu Gln Ala Cys					
15		1025		1030		1035
	Lys Glu Lys Leu Leu Ser Leu Thr Gln Ala Lys Glu Glu Ser Glu					
		1040		1045		1050
	Lys Gln Leu Cys Leu Ile Glu Ala Gln Thr Met Glu Ala Leu Leu					
		1055		1060		1065
20	Ala Leu Leu Pro Glu Leu Ser Val Leu Ala Gln Gln Asn Tyr Thr					
		1070		1075		1080
	Glu Trp Leu Gln Asp Leu Lys Glu Lys Gly Pro Thr Leu Leu Lys					
		1085		1090		1095
	His Pro Pro Ala Pro Ala Glu Pro Ser Ser Asp Leu Ala Ser Lys					

	1100		1105		1110
	Leu Arg	Glu Ala Glu Glu Thr	Gln Ser Thr Leu Gln	Ala Glu Cys	
	1115		1120		1125
	Asp Gln	Tyr Arg Ser Ile Leu	Ala Glu Thr Glu Gly	Met Leu Arg	
5	1130		1135		1140
	Asp Leu	Gln Lys Ser Val Glu	Glu Glu Glu Gln Val	Trp Arg Ala	
	1145		1150		1155
	Lys Val	Gly Ala Ala Glu Glu	Glu Leu Gln Lys Ser	Arg Val Thr	
	1160		1165		1170
10	Val Lys	His Leu Glu Glu Ile	Val Glu Lys Leu Lys	Gly Glu Leu	
	1175		1180		1185
	Glu Ser	Ser Asp Gln Val Arg	Glu His Thr Ser His	Leu Glu Ala	
	1190		1195		1200
	Glu Leu	Glu Lys His Met Ala	Ala Ala Ser Ala Glu	Cys Gln Asn	
15	1205		1210		1215
	Tyr Ala	Lys Glu Val Ala Gly	Leu Arg Gln Leu Leu	Leu Glu Ser	
	1220		1225		1230
	Gln Ser	Gln Leu Asp Ala Ala	Lys Ser Glu Ala Gln	Lys Gln Ser	
	1235		1240		1245
20	Asp Glu	Leu Ala Leu Val Arg	Gln Gln Leu Ser Glu	Met Lys Ser	
	1250		1255		1260
	His Val	Glu Asp Gly Asp Ile	Ala Gly Ala Pro Ala	Ser Ser Pro	
	1265		1270		1275
	Glu Ala	Pro Pro Ala Glu Gln	Asp Pro Val Gln Leu	Lys Thr Gln	

	1280		1285		1290
	Leu Glu Trp Thr Glu Ala Ile		Leu Glu Asp Glu Gln Thr Gln Arg		
	1295		1300		1305
	Gln Lys Leu Thr Ala Glu Phe		Glu Glu Ala Gln Thr Ser Ala Cys		
5	1310		1315		1320
	Arg Leu Gln Glu Glu Leu Glu		Lys Leu Arg Thr Ala Gly Pro Leu		
	1325		1330		1335
	Glu Ser Ser Glu Thr Glu Glu		Ala Ser Gln Leu Lys Glu Arg Leu		
	1340		1345		1350
10	Glu Lys Glu Lys Lys Leu Thr		Ser Asp Leu Gly Arg Ala Ala Thr		
	1355		1360		1365
	Arg Leu Gln Glu Leu Leu Lys		Thr Thr Gln Glu Gln Leu Ala Arg		
	1370		1375		1380
	Glu Lys Asp Thr Val Lys Lys		Leu Gln Glu Gln Leu Glu Lys Ala		
15	1385		1390		1395
	Glu Asp Gly Ser Ser Ser Lys		Glu Gly Thr Ser Val		
	1400		1405		1410

20 <210> 66

<211> 453

<212> PRT

<213> Homo sapiens

<220>

<221> Fibrinogen gamma chain precursor

<222> (1)..(453)

<223> Accession No. as of 29 August 2003: P02679

<400> 66

5

Met Ser Trp Ser Leu His Pro Arg Asn Leu Ile Leu Tyr Phe Tyr Ala  
1 5 10 15  
Leu Leu Phe Leu Ser Ser Thr Cys Val Ala Tyr Val Ala Thr Arg Asp  
20 25 30  
10 Asn Cys Cys Ile Leu Asp Glu Arg Phe Gly Ser Tyr Cys Pro Thr Thr  
35 40 45  
Cys Gly Ile Ala Asp Phe Leu Ser Thr Tyr Gln Thr Lys Val Asp Lys  
50 55 60  
Asp Leu Gln Ser Leu Glu Asp Ile Leu His Gln Val Glu Asn Lys Thr  
15 65 70 75 80  
Ser Glu Val Lys Gln Leu Ile Lys Ala Ile Gln Leu Thr Tyr Asn Pro  
85 90 95  
Asp Glu Ser Ser Lys Pro Asn Met Ile Asp Ala Ala Thr Leu Lys Ser  
100 105 110  
20 Arg Lys Met Leu Glu Glu Ile Met Lys Tyr Glu Ala Ser Ile Leu Thr  
115 120 125  
His Asp Ser Ser Ile Arg Tyr Leu Gln Glu Ile Tyr Asn Ser Asn Asn  
130 135 140  
Gln Lys Ile Val Asn Leu Lys Glu Lys Val Ala Gln Leu Glu Ala Gln

145	150	155	160
Cys Gln Glu Pro Cys Lys Asp Thr Val Gln Ile His Asp Ile Thr Gly			
	165	170	175
Lys Asp Cys Gln Asp Ile Ala Asn Lys Gly Ala Lys Gln Ser Gly Leu			
5	180	185	190
Tyr Phe Ile Lys Pro Leu Lys Ala Asn Gln Gln Phe Leu Val Tyr Cys			
	195	200	205
Glu Ile Asp Gly Ser Gly Asn Gly Trp Thr Val Phe Gln Lys Arg Leu			
	210	215	220
10	Asp Gly Ser Val Asp Phe Lys Lys Asn Trp Ile Gln Tyr Lys Glu Gly		
	225	230	235 240
Phe Gly His Leu Ser Pro Thr Gly Thr Thr Glu Phe Trp Leu Gly Asn			
	245	250	255
Glu Lys Ile His Leu Ile Ser Thr Gln Ser Ala Ile Pro Tyr Ala Leu			
15	260	265	270
Arg Val Glu Leu Glu Asp Trp Asn Gly Arg Thr Ser Thr Ala Asp Tyr			
	275	280	285
Ala Met Phe Lys Val Gly Pro Glu Ala Asp Lys Tyr Arg Leu Thr Tyr			
	290	295	300
20	Ala Tyr Phe Ala Gly Gly Asp Ala Gly Asp Ala Phe Asp Gly Phe Asp		
	305	310	315 320
Phe Gly Asp Asp Pro Ser Asp Lys Phe Phe Thr Ser His Asn Gly Met			
	325	330	335
Gln Phe Ser Thr Trp Asp Asn Asp Asn Asp Lys Phe Glu Gly Asn Cys			

	340	345	350
	Ala Glu Gln Asp Gly Ser Gly Trp Trp Met Asn Lys Cys His Ala Gly		
	355	360	365
	His Leu Asn Gly Val Tyr Tyr Gln Gly Gly Thr Tyr Ser Lys Ala Ser		
5	370	375	380
	Thr Pro Asn Gly Tyr Asp Asn Gly Ile Ile Trp Ala Thr Trp Lys Thr		
	385	390	395 400
	Arg Trp Tyr Ser Met Lys Lys Thr Thr Met Lys Ile Ile Pro Phe Asn		
	405	410	415
10	Arg Leu Thr Ile Gly Glu Gly Gln Gln His His Leu Gly Gly Ala Lys		
	420	425	430
	Gln Val Arg Pro Glu His Pro Ala Glu Thr Glu Tyr Asp Ser Leu Tyr		
	435	440	445
	Pro Glu Asp Asp Leu		
15	450		

<210> 67

<211> 622

20 <212> PRT

<213> Homo sapiens

<220>

<221> Prothrombin precursor

<222> (1) .. (622)



<223> Accession No. as of 29 August 2003: P00734

<400> 67

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala  
5 1 5 10 15  
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln  
20 25 30  
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Ala Asn Thr Phe Leu  
35 40 45  
10 Glu Glu Val Arg Lys Gly Asn Leu Glu Arg Glu Cys Val Glu Glu Thr  
50 55 60  
Cys Ser Tyr Glu Glu Ala Phe Glu Ala Leu Glu Ser Ser Thr Ala Thr  
65 70 75 80  
Asp Val Phe Trp Ala Lys Tyr Thr Ala Cys Glu Thr Ala Arg Thr Pro  
15 85 90 95  
Arg Asp Lys Leu Ala Ala Cys Leu Glu Gly Asn Cys Ala Glu Gly Leu  
100 105 110  
Gly Thr Asn Tyr Arg Gly His Val Asn Ile Thr Arg Ser Gly Ile Glu  
115 120 125  
20 Cys Gln Leu Trp Arg Ser Arg Tyr Pro His Lys Pro Glu Ile Asn Ser  
130 135 140  
Thr Thr His Pro Gly Ala Asp Leu Gln Glu Asn Phe Cys Arg Asn Pro  
145 150 155 160  
Asp Ser Ser Thr Thr Gly Pro Trp Cys Tyr Thr Thr Asp Pro Thr Val

	165	170	175
	Arg Arg Gln Glu Cys Ser Ile Pro Val Cys Gly Gln Asp Gln Val Thr		
	180	185	190
	Val Ala Met Thr Pro Arg Ser Glu Gly Ser Ser Val Asn Leu Ser Pro		
5	195	200	205
	Pro Leu Glu Gln Cys Val Pro Asp Arg Gly Gln Gln Tyr Gln Gly Arg		
	210	215	220
	Leu Ala Val Thr Thr His Gly Leu Pro Cys Leu Ala Trp Ala Ser Ala		
	225	230	235 240
10	Gln Ala Lys Ala Leu Ser Lys His Gln Asp Phe Asn Ser Ala Val Gln		
	245	250	255
	Leu Val Glu Asn Phe Cys Arg Asn Pro Asp Gly Asp Glu Glu Gly Val		
	260	265	270
	Trp Cys Tyr Val Ala Gly Lys Pro Gly Asp Phe Gly Tyr Cys Asp Leu		
15	275	280	285
	Asn Tyr Cys Glu Glu Ala Val Glu Glu Glu Thr Gly Asp Gly Leu Asp		
	290	295	300
	Glu Asp Ser Asp Arg Ala Ile Glu Gly Arg Thr Ala Thr Ser Glu Tyr		
	305	310	315 320
20	Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp Cys		
	325	330	335
	Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr Glu		
	340	345	350
	Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly Ser		



545                      550                      555                      560  
Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly Pro Phe Val Met Lys Ser  
                         565                      570                      575  
Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly Glu  
5                      580                      585                      590  
Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe Arg  
                         595                      600                      605  
Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu  
                         610                      615                      620

10

<210> 68  
<211> 530  
<212> PRT  
15 <213> Homo sapiens  
<220>  
<221> Pyruvate kinase  
<222> (1)..(530)  
<223> Accession No. as of 29 August 2003: P14618  
20 <400> 68

Ser Lys Pro His Ser Glu Ala Gly Thr Ala Phe Ile Gln Thr Gln Gln  
1                      5                      10                      15  
Leu His Ala Ala Met Ala Asp Thr Phe Leu Glu His Met Cys Arg Leu

	20		25		30
	Asp Ile Asp Ser Pro Pro Ile Thr Ala Arg Asn Thr Gly Ile Ile Cys				
	35		40		45
	Thr Ile Gly Pro Ala Ser Arg Ser Val Glu Thr Leu Lys Glu Met Ile				
5	50		55		60
	Lys Ser Gly Met Asn Val Ala Arg Leu Asn Phe Ser His Gly Thr His				
	65		70		75
					80
	Glu Tyr His Ala Glu Thr Ile Lys Asn Val Arg Thr Ala Thr Glu Ser				
		85		90	
					95
10	Phe Ala Ser Asp Pro Ile Leu Tyr Arg Pro Val Ala Val Ala Leu Asp				
	100		105		110
	Thr Lys Gly Pro Glu Ile Arg Thr Gly Leu Ile Lys Gly Ser Gly Thr				
	115		120		125
	Ala Glu Val Glu Leu Lys Lys Gly Ala Thr Leu Lys Ile Thr Leu Asp				
15	130		135		140
	Asn Ala Tyr Met Glu Lys Cys Asp Glu Asn Ile Leu Trp Leu Asp Tyr				
	145		150		155
					160
	Lys Asn Ile Cys Lys Val Val Glu Val Gly Ser Lys Ile Tyr Val Asp				
		165		170	
					175
20	Asp Gly Leu Ile Ser Leu Gln Val Lys Gln Lys Gly Ala Asp Phe Leu				
	180		185		190
	Val Thr Glu Val Glu Asn Gly Gly Ser Leu Gly Ser Lys Lys Gly Val				
	195		200		205
	Asn Leu Pro Gly Ala Ala Val Asp Leu Pro Ala Val Ser Glu Lys Asp				

210	215	220	
Ile	Gln	Asp	Leu
Lys	Phe	Gly	Val
Glu	Gln	Asp	Val
Asp	Met	Val	Phe
225	230	235	240
Ala	Ser	Phe	Ile
Arg	Lys	Ala	Ser
Asp	Val	His	Glu
Val	Arg	Lys	Val
5	245	250	255
Leu	Gly	Glu	Lys
Gly	Lys	Asn	Ile
Lys	Ile	Ile	Ser
Lys	Ile	Glu	Asn
260	265	270	
His	Glu	Gly	Val
Arg	Arg	Phe	Asp
Glu	Ile	Leu	Glu
Ala	Ser	Asp	Gly
275	280	285	
Ile	Met	Val	Ala
Arg	Gly	Asp	Leu
Gly	Ile	Glu	Ile
Pro	Ala	Glu	Lys
10	290	295	300
Val	Phe	Leu	Ala
Gln	Lys	Met	Met
Ile	Gly	Arg	Cys
Asn	Arg	Ala	Gly
305	310	315	320
Lys	Pro	Val	Ile
Cys	Ala	Thr	Gln
Met	Leu	Glu	Ser
Met	Ile	Lys	Lys
15	325	330	335
Pro	Arg	Pro	Thr
Arg	Ala	Glu	Gly
Ser	Asp	Val	Ala
Asn	Ala	Val	Leu
340	345	350	
Asp	Gly	Ala	Asp
Cys	Ile	Met	Leu
Ser	Gly	Glu	Thr
Ala	Lys	Gly	Asp
355	360	365	
Tyr	Pro	Leu	Glu
Ala	Val	Arg	Met
Gln	His	Leu	Ile
Ala	Arg	Glu	Ala
20	370	375	380
Glu	Ala	Ala	Ile
Tyr	His	Leu	Gln
Leu	Phe	Glu	Glu
Leu	Arg	Arg	Leu
385	390	395	400
Ala	Pro	Ile	Thr
Ser	Asp	Pro	Thr
Glu	Ala	Thr	Ala
Val	Gly	Ala	Val

405 410 415  
Glu Ala Ser Phe Lys Cys Cys Ser Gly Ala Ile Ile Val Leu Thr Lys  
420 425 430  
Ser Gly Arg Ser Ala His Gln Val Ala Arg Tyr Arg Pro Arg Ala Pro  
5 435 440 445  
Ile Ile Ala Val Thr Arg Asn Pro Gln Thr Ala Arg Gln Ala His Leu  
450 455 460  
Tyr Arg Gly Ile Phe Pro Val Leu Cys Lys Asp Pro Val Gln Glu Ala  
465 470 475 480  
10 Trp Ala Glu Asp Val Asp Leu Arg Val Asn Phe Ala Met Asn Val Gly  
485 490 495  
Lys Ala Arg Gly Phe Phe Lys Lys Gly Asp Val Val Ile Val Leu Thr  
500 505 510  
Gly Trp Arg Pro Gly Ser Gly Phe Thr Asn Thr Met Arg Val Val Pro  
15 515 520 525  
Val Pro  
530

20 <210> 69

<211> 328

<212> PRT

<213> Homo sapiens

<220>

<221> Reticulocalbin 3 precursor

<222> (1)..(328)

<223> Accession No. as of 29 August 2003: Q96D15

<400> 69

5

Met Met Trp Arg Pro Ser Val Leu Leu Leu Leu Leu Leu Leu Arg His

1 5 10 15

Gly Ala Gln Gly Lys Pro Ser Pro Asp Ala Gly Pro His Gly Gln Gly

20 25 30

10 Arg Val His Gln Ala Ala Pro Leu Ser Asp Ala Pro His Asp Asp Ala

35 40 45

His Gly Asn Phe Gln Tyr Asp His Glu Ala Phe Leu Gly Arg Glu Val

50 55 60

Ala Lys Glu Phe Asp Gln Leu Thr Pro Glu Glu Ser Gln Ala Arg Leu

15 65 70 75 80

Gly Arg Ile Val Asp Arg Met Asp Arg Ala Gly Asp Gly Asp Gly Trp

85 90 95

Val Ser Leu Ala Glu Leu Arg Ala Trp Ile Ala His Thr Gln Gln Arg

100 105 110

20 His Ile Arg Asp Ser Val Ser Ala Ala Trp Asp Thr Tyr Asp Thr Asp

115 120 125

Arg Asp Gly Arg Val Gly Trp Glu Glu Leu Arg Asn Ala Thr Tyr Gly

130 135 140

His Tyr Ala Pro Gly Glu Glu Phe His Asp Val Glu Asp Ala Glu Thr



145                      150                      155                      160  
Tyr Lys Lys Met Leu Ala Arg Asp Glu Arg Arg Phe Arg Val Ala Asp  
                         165                      170                      175  
Gln Asp Gly Asp Ser Met Ala Thr Arg Glu Glu Leu Thr Ala Phe Leu  
5                      180                      185                      190  
His Pro Glu Glu Phe Pro His Met Arg Asp Ile Val Ile Ala Glu Thr  
                         195                      200                      205  
Leu Glu Asp Leu Asp Arg Asn Lys Asp Gly Tyr Val Gln Val Glu Glu  
                         210                      215                      220  
10 Tyr Ile Ala Asp Leu Tyr Ser Ala Glu Pro Gly Glu Glu Glu Pro Ala  
                         225                      230                      235                      240  
Trp Val Gln Thr Glu Arg Gln Gln Phe Arg Asp Phe Arg Asp Leu Asn  
                         245                      250                      255  
Lys Asp Gly His Leu Asp Gly Ser Glu Val Gly His Trp Val Leu Pro  
15                      260                      265                      270  
Pro Ala Gln Asp Gln Pro Leu Val Glu Ala Asn His Leu Leu His Glu  
                         275                      280                      285  
Ser Asp Thr Asp Lys Asp Gly Arg Leu Ser Lys Ala Glu Ile Leu Gly  
                         290                      295                      300  
20 Asn Trp Asn Met Phe Val Gly Ser Gln Ala Thr Asn Tyr Gly Glu Asp  
                         305                      310                      315                      320  
Leu Thr Arg His His Asp Glu Leu  
                         325

<210> 70

<211> 469

<212> PRT

5 <213> Homo sapiens

<220>

<221> Desmin

<222> (1)..(469)

<223> Accession No. as of 29 August 2003: P17661

10 <400> 70

Ser Gln Ala Tyr Ser Ser Ser Gln Arg Val Ser Ser Tyr Arg Arg Thr  
1 5 10 15  
Phe Gly Gly Ala Pro Gly Phe Pro Leu Gly Ser Pro Leu Ser Ser Pro  
15 20 25 30  
Val Phe Pro Arg Ala Gly Phe Gly Ser Lys Gly Ser Ser Ser Ser Val  
35 40 45  
Thr Ser Arg Val Tyr Gln Val Ser Arg Thr Ser Gly Gly Ala Gly Gly  
50 55 60  
20 Leu Gly Ser Leu Arg Ala Ser Arg Leu Gly Thr Thr Arg Thr Pro Ser  
65 70 75 80  
Ser Tyr Gly Ala Gly Glu Leu Leu Asp Phe Ser Leu Ala Asp Ala Val  
85 90 95  
Asn Gln Glu Phe Leu Thr Thr Arg Thr Asn Glu Lys Val Glu Leu Gln

	100	105	110	
	Glu Leu Asn Asp Arg Phe Ala Asn Tyr Ile Glu Lys Val Arg Phe Leu			
	115	120	125	
	Glu Gln Gln Asn Ala Ala Leu Ala Ala Glu Val Asn Arg Leu Lys Gly			
5	130	135	140	
	Arg Glu Pro Thr Arg Val Ala Glu Leu Tyr Glu Glu Glu Leu Arg Glu			
	145	150	155	160
	Leu Arg Arg Gln Val Glu Val Leu Thr Asn Gln Arg Ala Arg Val Asp			
	165	170	175	
10	Val Glu Arg Asp Asn Leu Leu Asp Asp Leu Gln Arg Leu Lys Ala Lys			
	180	185	190	
	Leu Gln Glu Glu Ile Gln Leu Lys Glu Glu Ala Glu Asn Asn Leu Ala			
	195	200	205	
	Ala Phe Arg Ala Asp Val Asp Ala Ala Thr Leu Ala Arg Ile Asp Leu			
15	210	215	220	
	Glu Arg Arg Ile Glu Ser Leu Asn Glu Glu Ile Ala Phe Leu Lys Lys			
	225	230	235	240
	Val His Glu Glu Glu Ile Arg Glu Leu Gln Ala Gln Leu Gln Glu Gln			
	245	250	255	
20	Gln Val Gln Val Glu Met Asp Met Ser Lys Pro Asp Leu Thr Ala Ala			
	260	265	270	
	Leu Arg Asp Ile Arg Ala Gln Tyr Glu Thr Ile Ala Ala Lys Asn Ile			
	275	280	285	
	Ser Glu Ala Glu Glu Trp Tyr Lys Ser Lys Val Ser Asp Leu Thr Gln			



<210> 71

<211> 417

<212> PRT

5 <213> Homo sapiens

<220>

<221> Carboxypeptidase B precursor

<222> (1)..(417)

<223> Accession No. as of 29 August 2003: P15086

10 <400> 71

Met Leu Ala Leu Leu Val Leu Val Thr Val Ala Leu Ala Ser Ala His

1 5 10 15

His Gly Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg Val Asn Val

15 20 25 30

Glu Asp Glu Asn His Ile Asn Ile Ile Arg Glu Leu Ala Ser Thr Thr

35 40 45

Gln Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile Lys Pro His

50 55 60

20 Ser Thr Val Asp Phe Arg Val Lys Ala Glu Asp Thr Val Thr Val Glu

65 70 75 80

Asn Val Leu Lys Gln Asn Glu Leu Gln Tyr Lys Val Leu Ile Ser Asn

85 90 95

Leu Arg Asn Val Val Glu Ala Gln Phe Asp Ser Arg Val Arg Ala Thr

	100		105		110
	Gly His Ser Tyr Glu Lys Tyr Asn Lys Trp Glu Thr Ile Glu Ala Trp				
	115		120		125
	Thr Gln Gln Val Ala Thr Glu Asn Pro Ala Leu Ile Ser Arg Ser Val				
5	130		135		140
	Ile Gly Thr Thr Phe Glu Gly Arg Ala Ile Tyr Leu Leu Lys Val Gly				
	145		150		155
	Lys Ala Gly Gln Asn Lys Pro Ala Ile Phe Met Asp Cys Gly Phe His				
		165		170	175
10	Ala Arg Glu Trp Ile Ser Pro Ala Phe Cys Gln Trp Phe Val Arg Glu				
		180		185	190
	Ala Val Arg Thr Tyr Gly Arg Glu Ile Gln Val Thr Glu Leu Leu Asp				
		195		200	205
	Lys Leu Asp Phe Tyr Val Leu Pro Val Leu Asn Ile Asp Gly Tyr Ile				
15	210		215		220
	Tyr Thr Trp Thr Lys Ser Arg Phe Trp Arg Lys Thr Arg Ser Thr His				
	225		230		235
	Thr Gly Ser Ser Cys Ile Gly Thr Asp Pro Asn Arg Asn Phe Asp Ala				
		245		250	255
20	Gly Trp Cys Glu Ile Gly Ala Ser Arg Asn Pro Cys Asp Glu Thr Tyr				
		260		265	270
	Cys Gly Pro Ala Ala Glu Ser Glu Lys Glu Thr Lys Ala Leu Ala Asp				
		275		280	285
	Phe Ile Arg Asn Lys Leu Ser Ser Ile Lys Ala Tyr Leu Thr Ile His				

290	295	300
Ser Tyr Ser Gln Met Met Ile Tyr Pro Tyr Ser Tyr Ala Tyr Lys Leu		
305	310	315 320
Gly Glu Asn Asn Ala Glu Leu Asn Ala Leu Ala Lys Ala Thr Val Lys		
5	325	330 335
Glu Leu Ala Ser Leu His Gly Thr Lys Tyr Thr Tyr Gly Pro Gly Ala		
	340	345 350
Thr Thr Ile Tyr Pro Ala Ala Gly Gly Ser Asp Asp Trp Ala Tyr Asp		
	355	360 365
10	Gln Gly Ile Arg Tyr Ser Phe Thr Phe Glu Leu Arg Asp Thr Gly Arg	
	370	375 380
Tyr Gly Phe Leu Leu Pro Glu Ser Gln Ile Arg Ala Thr Cys Glu Glu		
	385	390 395 400
Thr Phe Leu Ala Ile Lys Tyr Val Ala Ser Tyr Val Leu Glu His Leu		
15	405	410 415
Tyr		

20 <210> 72

<211> 419

<212> PRT

<213> Homo sapiens

<220>

<221> Carboxypeptidase A1 precursor

<222> (1)..(419)

<223> Accession No. as of 29 August 2003: P15085

<400> 72

5

Met Arg Gly Leu Leu Val Leu Ser Val Leu Leu Gly Ala Val Phe Gly

1 5 10 15

Lys Glu Asp Phe Val Gly His Gln Val Leu Arg Ile Ser Val Ala Asp

20 25 30

10 Glu Ala Gln Val Gln Lys Val Lys Glu Leu Glu Asp Leu Glu His Leu

35 40 45

Gln Leu Asp Phe Trp Arg Gly Pro Ala His Pro Gly Ser Pro Ile Asp

50 55 60

Val Arg Val Pro Phe Pro Ser Ile Gln Ala Val Lys Ile Phe Leu Glu

15 65 70 75 80

Ser His Gly Ile Ser Tyr Glu Thr Met Ile Glu Asp Val Gln Ser Leu

85 90 95

Leu Asp Glu Glu Gln Glu Gln Met Phe Ala Phe Arg Ser Arg Ala Arg

100 105 110

20 Ser Thr Asp Thr Phe Asn Tyr Ala Thr Tyr His Thr Leu Glu Glu Ile

115 120 125

Tyr Asp Phe Leu Asp Leu Leu Val Ala Glu Asn Pro His Leu Val Ser

130 135 140

Lys Ile Gln Ile Gly Asn Thr Tyr Glu Gly Arg Pro Ile Tyr Val Leu



145	150	155	160
Lys Phe Ser Thr Gly Gly Ser Lys Arg Pro Ala Ile Trp Ile Asp Thr			
	165	170	175
Gly Ile His Ser Arg Glu Trp Val Thr Gln Ala Ser Gly Val Trp Phe			
5	180	185	190
Ala Lys Lys Ile Thr Gln Asp Tyr Gly Gln Asp Ala Ala Phe Thr Ala			
	195	200	205
Ile Leu Asp Thr Leu Asp Ile Phe Leu Glu Ile Val Thr Asn Pro Asp			
	210	215	220
10	Gly Phe Ala Phe Thr His Ser Thr Asn Arg Met Trp Arg Lys Thr Arg		
	225	230	235 240
Ser His Thr Ala Gly Ser Leu Cys Ile Gly Val Asp Pro Asn Arg Asn			
	245	250	255
Trp Asp Ala Gly Phe Gly Leu Ser Gly Ala Ser Ser Asn Pro Cys Ser			
15	260	265	270
Glu Thr Tyr His Gly Lys Phe Ala Asn Ser Glu Val Glu Val Lys Ser			
	275	280	285
Ile Val Asp Phe Val Lys Asp His Gly Asn Ile Lys Ala Phe Ile Ser			
	290	295	300
20	Ile His Ser Tyr Ser Gln Leu Leu Met Tyr Pro Tyr Gly Tyr Lys Thr		
	305	310	315 320
Glu Pro Val Pro Asp Gln Asp Glu Leu Asp Gln Leu Ser Lys Ala Ala			
	325	330	335
Val Thr Ala Leu Ala Ser Leu Tyr Gly Thr Lys Phe Asn Tyr Gly Ser			

- 260 -

340                      345                      350  
 Ile Ile Lys Ala Ile Tyr Gln Ala Ser Gly Ser Thr Ile Asp Trp Thr  
 355                      360                      365  
 Tyr Ser Gln Gly Ile Lys Tyr Ser Phe Thr Phe Glu Leu Arg Asp Thr  
 5            370                      375                      380  
 Gly Arg Tyr Gly Phe Leu Leu Pro Ala Ser Gln Ile Ile Pro Thr Ala  
 385                      390                      395                      400  
 Lys Glu Thr Trp Leu Ala Leu Leu Thr Ile Met Glu His Thr Leu Asn  
 405                      410                      415  
 10 His Pro Tyr

<210> 73  
 15 <211> 418  
 <212> PRT  
 <213> Homo sapiens  
 <220>  
 <221> Colligin 2  
 20 <222> (1)..(418)  
 <223> Accession No. as of 29 August 2003: P50454  
 <400> 73

Met Arg Ser Leu Leu Leu Leu Ser Ala Phe Cys Leu Leu Glu Ala Ala

1	5	10	15
Leu Ala Ala Glu Val Lys Lys Pro Ala Ala Ala Ala Pro Gly Thr			
	20	25	30
Ala Glu Lys Leu Ser Pro Lys Ala Ala Thr Leu Ala Glu Arg Ser Ala			
5	35	40	45
Gly Leu Ala Phe Ser Leu Tyr Gln Ala Met Ala Lys Asp Gln Ala Val			
	50	55	60
Glu Asn Ile Leu Val Ser Pro Val Val Val Ala Ser Ser Leu Gly Leu			
	65	70	75
			80
10	Val Ser Leu Gly Gly Lys Ala Thr Thr Ala Ser Gln Ala Lys Ala Val		
	85	90	95
Leu Ser Ala Glu Gln Leu Arg Asp Glu Glu Val His Ala Gly Leu Gly			
	100	105	110
Glu Leu Leu Arg Ser Leu Ser Asn Ser Thr Ala Arg Asn Val Thr Trp			
15	115	120	125
Lys Leu Gly Ser Arg Leu Tyr Gly Pro Ser Ser Val Ser Phe Ala Asp			
	130	135	140
Asp Phe Val Arg Ser Ser Lys Gln His Tyr Asn Cys Glu His Ser Lys			
	145	150	155
			160
20	Ile Asn Phe Arg Asp Lys Arg Ser Ala Leu Gln Ser Ile Asn Glu Trp		
	165	170	175
Ala Ala Gln Thr Thr Asp Gly Lys Leu Pro Glu Val Thr Lys Asp Val			
	180	185	190
Glu Arg Thr Asp Gly Ala Leu Leu Val Asn Ala Met Phe Phe Lys Pro			



385                      390                      395                      400

Leu Phe Ile Gly Arg Leu Val Arg Pro Lys Gly Asp Lys Met Arg Asp

405                      410                      415

Glu Leu

5

<210> 74

<211> 263

10 <212> PRT

<213> Homo sapiens

<220>

<221> Chymotrypsinogen B precursor

<222> (1)..(263)

15 <223> Accession No. as of 29 August 2003: P17538

<400> 74

Met Ala Phe Leu Trp Leu Leu Ser Cys Trp Ala Leu Leu Gly Thr Thr

1                      5                      10                      15

20 Phe Gly Cys Gly Val Pro Ala Ile His Pro Val Leu Ser Gly Leu Ser

20                      25                      30

Arg Ile Val Asn Gly Glu Asp Ala Val Pro Gly Ser Trp Pro Trp Gln

35                      40                      45

Val Ser Leu Gln Asp Lys Thr Gly Phe His Phe Cys Gly Gly Ser Leu

```

50              55              60
Ile Ser Glu Asp Trp Val Val Thr Ala Ala His Cys Gly Val Arg Thr
65              70              75              80
Ser Asp Val Val Val Ala Gly Glu Phe Asp Gln Gly Ser Asp Glu Glu
5              85              90              95
Asn Ile Gln Val Leu Lys Ile Ala Lys Val Phe Lys Asn Pro Lys Phe
              100              105              110
Ser Ile Leu Thr Val Asn Asn Asp Ile Thr Leu Leu Lys Leu Ala Thr
              115              120              125
10 Pro Ala Arg Phe Ser Gln Thr Val Ser Ala Val Cys Leu Pro Ser Ala
              130              135              140
Asp Asp Asp Phe Pro Ala Gly Thr Leu Cys Ala Thr Thr Gly Trp Gly
145              150              155              160
Lys Thr Lys Tyr Asn Ala Asn Lys Thr Pro Asp Lys Leu Gln Gln Ala
15              165              170              175
Ala Leu Pro Leu Leu Ser Asn Ala Glu Cys Lys Lys Ser Trp Gly Arg
              180              185              190
Arg Ile Thr Asp Val Met Ile Cys Ala Gly Ala Ser Gly Val Ser Ser
              195              200              205
20 Cys Met Gly Asp Ser Gly Gly Pro Leu Val Cys Gln Lys Asp Gly Ala
              210              215              220
Trp Thr Leu Val Gly Ile Val Ser Trp Gly Ser Asp Thr Cys Ser Thr
225              230              235              240
Ser Ser Pro Gly Val Tyr Ala Arg Val Thr Lys Leu Ile Pro Trp Val

```

245

250

255

Gln Lys Ile Leu Ala Ala Asn

260

5

<210> 75

<211> 247

<212> PRT

<213> Homo sapiens

10 <220>

<221> Trypsin I precursor

<222> (1)..(247)

<223> Accession No. as of 29 August 2003: P07477

<400> 75

15

Met Asn Pro Leu Leu Ile Leu Thr Phe Val Ala Ala Ala Leu Ala Ala

1 5 10 15

Pro Phe Asp Asp Asp Asp Lys Ile Val Gly Gly Tyr Asn Cys Glu Glu

20 25 30

20 Asn Ser Val Pro Tyr Gln Val Ser Leu Asn Ser Gly Tyr His Phe Cys

35 40 45

Gly Gly Ser Leu Ile Asn Glu Gln Trp Val Val Ser Ala Gly His Cys

50 55 60

Tyr Lys Ser Arg Ile Gln Val Arg Leu Gly Glu His Asn Ile Glu Val

65	70	75	80
Leu Glu Gly Asn Glu Gln Phe Ile Asn Ala Ala Lys Ile Ile Arg His			
	85	90	95
Pro Gln Tyr Asp Arg Lys Thr Leu Asn Asn Asp Ile Met Leu Ile Lys			
5	100	105	110
Leu Ser Ser Arg Ala Val Ile Asn Ala Arg Val Ser Thr Ile Ser Leu			
	115	120	125
Pro Thr Ala Pro Pro Ala Thr Gly Thr Lys Cys Leu Ile Ser Gly Trp			
	130	135	140
10	Gly Asn Thr Ala Ser Ser Gly Ala Asp Tyr Pro Asp Glu Leu Gln Cys		
	145	150	155
	Leu Asp Ala Pro Val Leu Ser Gln Ala Lys Cys Glu Ala Ser Tyr Pro		
	165	170	175
Gly Lys Ile Thr Ser Asn Met Phe Cys Val Gly Phe Leu Glu Gly Gly			
15	180	185	190
Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Val Val Cys Asn Gly			
	195	200	205
Gln Leu Gln Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln Lys Asn			
	210	215	220
20	Lys Pro Gly Val Tyr Thr Lys Val Tyr Asn Tyr Val Lys Trp Ile Lys		
	225	230	235
	Asn Thr Ile Ala Ala Asn Ser		
	245		



<210> 76

<211> 247

<212> PRT

5 <213> Homo sapiens

<220>

<221> Trypsin II precursor

<222> (1)..(247)

<223> Accession No. as of 29 August 2003: P07478

10 <400> 76

Met Asn Leu Leu Leu Ile Leu Thr Phe Val Ala Ala Ala Val Ala Ala

1 5 10 15

Pro Phe Asp Asp Asp Asp Lys Ile Val Gly Gly Tyr Ile Cys Glu Glu

15 20 25 30

Asn Ser Val Pro Tyr Gln Val Ser Leu Asn Ser Gly Tyr His Phe Cys

35 40 45

Gly Gly Ser Leu Ile Ser Glu Gln Trp Val Val Ser Ala Gly His Cys

50 55 60

20 Tyr Lys Ser Arg Ile Gln Val Arg Leu Gly Glu His Asn Ile Glu Val

65 70 75 80

Leu Glu Gly Asn Glu Gln Phe Ile Asn Ala Ala Lys Ile Ile Arg His

85 90 95

Pro Lys Tyr Asn Ser Arg Thr Leu Asp Asn Asp Ile Leu Leu Ile Lys

100 105 110  
Leu Ser Ser Pro Ala Val Ile Asn Ser Arg Val Ser Ala Ile Ser Leu  
115 120 125  
Pro Thr Ala Pro Pro Ala Ala Gly Thr Glu Ser Leu Ile Ser Gly Trp  
5 130 135 140  
Gly Asn Thr Leu Ser Ser Gly Ala Asp Tyr Pro Asp Glu Leu Gln Cys  
145 150 155 160  
Leu Asp Ala Pro Val Leu Ser Gln Ala Glu Cys Glu Ala Ser Tyr Pro  
165 170 175  
10 Gly Lys Ile Thr Asn Asn Met Phe Cys Val Gly Phe Leu Glu Gly Gly  
180 185 190  
Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Val Val Ser Asn Gly  
195 200 205  
Glu Leu Gln Gly Ile Val Ser Trp Gly Tyr Gly Cys Ala Gln Lys Asn  
15 210 215 220  
Arg Pro Gly Val Tyr Thr Lys Val Tyr Asn Tyr Val Asp Trp Ile Lys  
225 230 235 240  
Asp Thr Ile Ala Ala Asn Ser  
245

20

<210> 77

<211> 379

<212> PRT

<213> Homo sapiens

<220>

<221> Leukocyte elastase inhibitor (LEI)

<222> (1)..(379)

5 <223> Accession No. as of 29 August 2003: P30740

<400> 77

Met Glu Gln Leu Ser Ser Ala Asn Thr Arg Phe Ala Leu Asp Leu Phe  
1 5 10 15  
10 Leu Ala Leu Ser Glu Asn Asn Pro Ala Gly Asn Ile Phe Ile Ser Pro  
20 25 30  
Phe Ser Ile Ser Ser Ala Met Ala Met Val Phe Leu Gly Thr Arg Gly  
35 40 45  
Asn Thr Ala Ala Gln Leu Ser Lys Thr Phe His Phe Asn Thr Val Glu  
15 50 55 60  
Glu Val His Ser Arg Phe Gln Ser Leu Asn Ala Asp Ile Asn Lys Arg  
65 70 75 80  
Gly Ala Ser Tyr Ile Leu Lys Leu Ala Asn Arg Leu Tyr Gly Glu Lys  
85 90 95  
20 Thr Tyr Asn Phe Leu Pro Glu Phe Leu Val Ser Thr Gln Lys Thr Tyr  
100 105 110  
Gly Ala Asp Leu Ala Ser Val Asp Phe Gln His Ala Ser Glu Asp Ala  
115 120 125  
Arg Lys Thr Ile Asn Gln Trp Val Lys Gly Gln Thr Glu Gly Lys Ile

130 135 140  
Pro Glu Leu Leu Ala Ser Gly Met Val Asp Asn Met Thr Lys Leu Val  
145 150 155 160  
Leu Val Asn Ala Ile Tyr Phe Lys Gly Asn Trp Lys Asp Lys Phe Met  
5 165 170 175  
Lys Glu Ala Thr Thr Asn Ala Pro Phe Arg Leu Asn Lys Lys Asp Arg  
180 185 190  
Lys Thr Val Lys Met Met Tyr Gln Lys Lys Lys Phe Ala Tyr Gly Tyr  
195 200 205  
10 Ile Glu Asp Leu Lys Cys Arg Val Leu Glu Leu Pro Tyr Gln Gly Glu  
210 215 220  
Glu Leu Ser Met Val Ile Leu Leu Pro Asp Asp Ile Glu Asp Glu Ser  
225 230 235 240  
Thr Gly Leu Lys Lys Ile Glu Glu Gln Leu Thr Leu Glu Lys Leu His  
15 245 250 255  
Glu Trp Thr Lys Pro Glu Asn Leu Asp Phe Ile Glu Val Asn Val Ser  
260 265 270  
Leu Pro Arg Phe Lys Leu Glu Glu Ser Tyr Thr Leu Asn Ser Asp Leu  
275 280 285  
20 Ala Arg Leu Gly Val Gln Asp Leu Phe Asn Ser Ser Lys Ala Asp Leu  
290 295 300  
Ser Gly Met Ser Gly Ala Arg Asp Ile Phe Ile Ser Lys Ile Val His  
305 310 315 320  
Lys Ser Phe Val Glu Val Asn Glu Glu Gly Thr Glu Ala Ala Ala Ala

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	325	330	335
	Thr Ala Gly Ile Ala Thr Phe Cys Met Leu Met Pro Glu Glu Asn Phe		
	340	345	350
	Thr Ala Asp His Pro Phe Leu Phe Phe Ile Arg His Asn Ser Ser Gly		
5	355	360	365
	Ser Ile Leu Phe Leu Gly Arg Phe Ser Ser Pro		
	370	375	

10 <210> 78

<211> 573

<212> PRT

<213> Homo sapiens

<220>

15 <221> Hsp60

<222> (1) .. (573)

<223> Accession No. as of 29 August 2003: P10809

<400> 78

20 Met Leu Arg Leu Pro Thr Val Phe Arg Gln Met Arg Pro Val Ser Arg

1	5	10	15
---	---	----	----

Val Leu Ala Pro His Leu Thr Arg Ala Tyr Ala Lys Asp Val Lys Phe

20	25	30
----	----	----

Gly Ala Asp Ala Arg Ala Leu Met Leu Gln Gly Val Asp Leu Leu Ala





420 425 430  
Glu Glu Gly Ile Val Leu Gly Gly Gly Cys Ala Leu Leu Arg Cys Ile  
435 440 445  
Pro Ala Leu Asp Ser Leu Thr Pro Ala Asn Glu Asp Gln Lys Ile Gly  
5 450 455 460  
Ile Glu Ile Ile Lys Arg Thr Leu Lys Ile Pro Ala Met Thr Ile Ala  
465 470 475 480  
Lys Asn Ala Gly Val Glu Gly Ser Leu Ile Val Glu Lys Ile Met Gln  
485 490 495  
10 Ser Ser Ser Glu Val Gly Tyr Asp Ala Met Ala Gly Asp Phe Val Asn  
500 505 510  
Met Val Glu Lys Gly Ile Ile Asp Pro Thr Lys Val Val Arg Thr Ala  
515 520 525  
Leu Leu Asp Ala Ala Gly Val Ala Ser Leu Leu Thr Thr Ala Glu Val  
15 530 535 540  
Val Val Thr Glu Ile Pro Lys Glu Glu Lys Asp Pro Gly Met Gly Ala  
545 550 555 560  
Met Gly Gly Met Gly Gly Gly Met Gly Gly Gly Met Phe  
565 570

20

<210> 79

<211> 803

<212> PRT



<213> Homo sapiens

<220>

<221> Endoplasmin precursor (GRP94)

<222> (1)..(803)

5 <223> Accession No. as of 29 August 2003: P14625

<400> 79

Met Arg Ala Leu Trp Val Leu Gly Leu Cys Cys Val Leu Leu Thr Phe  
1 5 10 15  
10 Gly Ser Val Arg Ala Asp Asp Glu Val Asp Val Asp Gly Thr Val Glu  
20 25 30  
Glu Asp Leu Gly Lys Ser Arg Glu Gly Ser Arg Thr Asp Asp Glu Val  
35 40 45  
Val Gln Arg Glu Glu Glu Ala Ile Gln Leu Asp Gly Leu Asn Ala Ser  
15 50 55 60  
Gln Ile Arg Glu Leu Arg Glu Lys Ser Glu Lys Phe Ala Phe Gln Ala  
65 70 75 80  
Glu Val Asn Arg Met Met Lys Leu Ile Ile Asn Ser Leu Tyr Lys Asn  
85 90 95  
20 Lys Glu Ile Phe Leu Arg Glu Leu Ile Ser Asn Ala Ser Asp Ala Leu  
100 105 110  
Asp Lys Ile Arg Leu Ile Ser Leu Thr Asp Glu Asn Ala Leu Ser Gly  
115 120 125  
Asn Glu Glu Leu Thr Val Lys Ile Lys Cys Asp Lys Glu Lys Asn Leu



	325	330	335
	Asn Asp Ile Lys Pro Ile Trp Gln Arg Pro Ser Lys Glu Val Glu Glu		
	340	345	350
	Asp Glu Tyr Lys Ala Phe Tyr Lys Ser Phe Ser Lys Glu Ser Asp Asp		
5	355	360	365
	Pro Met Ala Tyr Ile His Phe Thr Ala Glu Gly Glu Val Thr Phe Lys		
	370	375	380
	Ser Ile Leu Phe Val Pro Thr Ser Ala Pro Arg Gly Leu Phe Asp Glu		
	385	390	395 400
10	Tyr Gly Ser Lys Lys Ser Asp Tyr Ile Lys Leu Tyr Val Arg Arg Val		
	405	410	415
	Phe Ile Thr Asp Asp Phe His Asp Met Met Pro Lys Tyr Leu Asn Phe		
	420	425	430
	Val Lys Gly Val Val Asp Ser Asp Asp Leu Pro Leu Asn Val Ser Arg		
15	435	440	445
	Glu Thr Leu Gln Gln His Lys Leu Leu Lys Val Ile Arg Lys Lys Leu		
	450	455	460
	Val Arg Lys Thr Leu Asp Met Ile Lys Lys Ile Ala Asp Asp Lys Tyr		
	465	470	475 480
20	Asn Asp Thr Phe Trp Lys Glu Phe Gly Thr Asn Ile Lys Leu Gly Val		
	485	490	495
	Ile Glu Asp His Ser Asn Arg Thr Arg Leu Ala Lys Leu Leu Arg Phe		
	500	505	510
	Gln Ser Ser His His Pro Thr Asp Ile Thr Ser Leu Asp Gln Tyr Val		

	515	520	525	
	Glu Arg Met Lys Glu Lys Gln Asp Lys Ile Tyr Phe Met Ala Gly Ser			
	530	535	540	
	Ser Arg Lys Glu Ala Glu Ser Ser Pro Phe Val Glu Arg Leu Leu Lys			
5	545	550	555	560
	Lys Gly Tyr Glu Val Ile Tyr Leu Thr Glu Pro Val Asp Glu Tyr Cys			
	565	570	575	
	Ile Gln Ala Leu Pro Glu Phe Asp Gly Lys Arg Phe Gln Asn Val Ala			
	580	585	590	
10	Lys Glu Gly Val Lys Phe Asp Glu Ser Glu Lys Thr Lys Glu Ser Arg			
	595	600	605	
	Glu Ala Val Glu Lys Glu Phe Glu Pro Leu Leu Asn Trp Met Lys Asp			
	610	615	620	
	Lys Ala Leu Lys Asp Lys Ile Glu Lys Ala Val Val Ser Gln Arg Leu			
15	625	630	635	640
	Thr Glu Ser Pro Cys Ala Leu Val Ala Ser Gln Tyr Gly Trp Ser Gly			
	645	650	655	
	Asn Met Glu Arg Ile Met Lys Ala Gln Ala Tyr Gln Thr Gly Lys Asp			
	660	665	670	
20	Ile Ser Thr Asn Tyr Tyr Ala Ser Gln Lys Lys Thr Phe Glu Ile Asn			
	675	680	685	
	Pro Arg His Pro Leu Ile Arg Asp Met Leu Arg Arg Ile Lys Glu Asp			
	690	695	700	
	Glu Asp Asp Lys Thr Val Leu Asp Leu Ala Val Val Leu Phe Glu Thr			

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705                      710                      715                      720  
Ala Thr Leu Arg Ser Gly Tyr Leu Leu Pro Asp Thr Lys Ala Tyr Gly  
                         725                      730                      735  
Asp Arg Ile Glu Arg Met Leu Arg Leu Ser Leu Asn Ile Asp Pro Asp  
5                      740                      745                      750  
Ala Lys Val Glu Glu Glu Pro Glu Glu Glu Pro Glu Glu Thr Ala Glu  
                         755                      760                      765  
Asp Thr Thr Glu Asp Thr Glu Gln Asp Glu Asp Glu Glu Met Asp Val  
                         770                      775                      780  
10 Gly Thr Asp Glu Glu Glu Glu Thr Ala Lys Glu Ser Thr Ala Glu Lys  
785                      790                      795                      800  
Asp Glu Leu

15

<210> 80

<211> 261

<212> PRT

<213> Homo sapiens

20 <220>

<221> Endoplasmic reticulum protein ERp29 precursor (ERp31) (ERp28)

<222> (1)..(261)

<223> Accession No. as of 29 August 2003: P30040

<400> 80

Met Ala Ala Ala Val Pro Arg Ala Ala Phe Leu Ser Pro Leu Leu Pro  
1 5 10 15  
Leu Leu Leu Gly Phe Leu Leu Leu Ser Ala Pro His Gly Gly Ser Gly  
5 20 25 30  
Leu His Thr Lys Gly Ala Leu Pro Leu Asp Thr Val Thr Phe Tyr Lys  
35 40 45  
Val Ile Pro Lys Ser Lys Phe Val Leu Val Lys Phe Asp Thr Gln Tyr  
50 55 60  
10 Pro Tyr Gly Glu Lys Gln Asp Glu Phe Lys Arg Leu Ala Glu Asn Ser  
65 70 75 80  
Ala Ser Ser Asp Asp Leu Leu Val Ala Glu Val Gly Ile Ser Asp Tyr  
85 90 95  
Gly Asp Lys Leu Asn Met Glu Leu Ser Glu Lys Tyr Lys Leu Asp Lys  
15 100 105 110  
Glu Ser Tyr Pro Val Phe Tyr Leu Phe Arg Asp Gly Asp Phe Glu Asn  
115 120 125  
Pro Val Pro Tyr Thr Gly Ala Val Lys Val Gly Ala Ile Gln Arg Trp  
130 135 140  
20 Leu Lys Gly Gln Gly Val Tyr Leu Gly Met Pro Gly Cys Leu Pro Val  
145 150 155 160  
Tyr Asp Ala Leu Ala Gly Glu Phe Ile Arg Ala Ser Gly Val Glu Ala  
165 170 175  
Arg Gln Ala Leu Leu Lys Gln Gly Gln Asp Asn Leu Ser Ser Val Lys

180 185 190  
Glu Thr Gln Lys Lys Trp Ala Glu Gln Tyr Leu Lys Ile Met Gly Lys  
195 200 205  
Ile Leu Asp Gln Gly Glu Asp Phe Pro Ala Ser Glu Met Thr Arg Ile  
5 210 215 220  
Ala Arg Leu Ile Glu Lys Asn Lys Met Ser Asp Gly Lys Lys Glu Glu  
225 230 235 240  
Leu Gln Lys Ser Leu Asn Ile Leu Thr Ala Phe Gln Lys Lys Gly Ala  
245 250 255  
10 Glu Lys Glu Glu Leu  
260

<210> 81  
15 <211> 525  
<212> PRT  
<213> Homo sapiens  
<220>  
<221> Protein disulfide isomerase A2 precursor  
20 <222> (1)..(525)  
<223> Accession No. as of 29 August 2003: Q13087  
<400> 81

Met Ser Arg Gln Leu Leu Pro Val Leu Leu Leu Leu Leu Leu Arg Ala

1	5	10	15	
Ser Cys Pro Trp Gly Gln Glu Gln Gly Ala Arg Ser Pro Ser Glu Glu				
	20	25	30	
Pro Pro Glu Glu Glu Ile Pro Lys Glu Asp Gly Ile Leu Val Leu Ser				
5	35	40	45	
Arg His Thr Leu Gly Leu Ala Leu Arg Glu His Pro Ala Leu Leu Val				
	50	55	60	
Glu Phe Tyr Ala Pro Trp Cys Gly His Cys Gln Ala Leu Ala Pro Glu				
	65	70	75	80
10	Tyr Ser Lys Ala Ala Ala Val Leu Ala Ala Glu Ser Met Val Val Thr			
	85	90	95	
Leu Ala Lys Val Asp Gly Pro Ala Gln Arg Glu Leu Ala Glu Glu Phe				
	100	105	110	
Gly Val Thr Glu Tyr Pro Thr Leu Lys Phe Phe Arg Asn Gly Asn Arg				
15	115	120	125	
Thr His Pro Glu Glu Tyr Thr Gly Pro Arg Asp Ala Glu Gly Ile Ala				
	130	135	140	
Glu Trp Leu Arg Arg Arg Val Gly Pro Ser Ala Met Arg Leu Glu Asp				
	145	150	155	160
20	Glu Ala Ala Ala Gln Ala Leu Ile Gly Gly Arg Asp Leu Val Val Ile			
	165	170	175	
Gly Phe Phe Gln Asp Leu Gln Asp Glu Asp Val Ala Thr Phe Leu Ala				
	180	185	190	
Leu Ala Gln Asp Ala Leu Asp Met Thr Phe Gly Leu Thr Asp Arg Pro				



	195		200		205											
	Arg	Leu	Phe	Gln	Gln	Phe	Gly	Leu	Thr	Lys	Asp	Thr	Val	Val	Leu	Phe
	210						215								220	
	Lys	Lys	Phe	Asp	Glu	Gly	Arg	Ala	Asp	Phe	Pro	Val	Asp	Glu	Glu	Leu
5	225						230								235	240
	Gly	Leu	Asp	Leu	Gly	Asp	Leu	Ser	Arg	Phe	Leu	Val	Thr	His	Ser	Met
							245								250	255
	Arg	Leu	Val	Thr	Glu	Phe	Asn	Ser	Gln	Thr	Ser	Ala	Lys	Ile	Phe	Ala
							260								265	270
10	Ala	Arg	Ile	Leu	Asn	His	Leu	Leu	Leu	Phe	Val	Asn	Gln	Thr	Leu	Ala
							275								280	285
	Ala	His	Arg	Glu	Leu	Leu	Ala	Gly	Phe	Gly	Glu	Ala	Ala	Pro	Arg	Phe
							290								295	300
	Arg	Gly	Gln	Val	Leu	Phe	Val	Val	Val	Asp	Val	Ala	Ala	Asp	Asn	Glu
15	305						310								315	320
	His	Val	Leu	Gln	Tyr	Phe	Gly	Leu	Lys	Ala	Glu	Ala	Ala	Pro	Thr	Leu
							325								330	335
	Arg	Leu	Val	Asn	Leu	Glu	Thr	Thr	Lys	Lys	Tyr	Ala	Pro	Val	Asp	Gly
							340								345	350
20	Gly	Pro	Val	Thr	Ala	Ala	Ser	Ile	Thr	Ala	Phe	Cys	His	Ala	Val	Leu
							355								360	365
	Asn	Gly	Gln	Val	Lys	Pro	Tyr	Leu	Leu	Ser	Gln	Glu	Ile	Pro	Pro	Asp
							370								375	380
	Trp	Asp	Gln	Arg	Pro	Val	Lys	Thr	Leu	Val	Gly	Lys	Asn	Phe	Glu	Gln

385	390	395	400
Val Ala Phe Asp Glu Thr Lys Asn Val Phe Val Lys Phe Tyr Ala Pro			
	405	410	415
Trp Cys Thr His Cys Lys Glu Met Ala Pro Ala Trp Glu Ala Leu Ala			
5	420	425	430
Glu Lys Tyr Gln Asp His Glu Asp Ile Ile Ile Ala Glu Leu Asp Ala			
	435	440	445
Thr Ala Asn Glu Leu Asp Ala Phe Ala Val His Gly Phe Pro Thr Leu			
	450	455	460
10	Lys Tyr Phe Pro Ala Gly Pro Gly Arg Lys Val Ile Glu Tyr Lys Ser		
	465	470	475 480
Thr Arg Asp Leu Glu Thr Phe Ser Lys Phe Leu Asp Asn Gly Gly Val			
	485	490	495
Leu Pro Thr Glu Glu Pro Pro Glu Glu Pro Ala Ala Pro Phe Pro Glu			
15	500	505	510
Pro Pro Ala Asn Ser Thr Met Gly Ser Lys Glu Glu Leu			
	515	520	525

20 <210> 82

<211> 505

<212> PRT

<213> Homo sapiens

<220>

<221> Protein disulfide isomerase A3 precursor

<222> (1)..(505)

<223> Accession No. as of 29 August 2003: P30101

<400> 82

5

Met Arg Leu Arg Arg Leu Ala Leu Phe Pro Gly Val Ala Leu Leu Leu

1 5 10 15

Ala Ala Ala Arg Leu Ala Ala Ala Ser Asp Val Leu Glu Leu Thr Asp

20 25 30

10 Asp Asn Phe Glu Ser Arg Ile Ser Asp Thr Gly Ser Ala Gly Leu Met

35 40 45

Leu Val Glu Phe Phe Ala Pro Trp Cys Gly His Cys Lys Arg Leu Ala

50 55 60

Pro Glu Tyr Glu Ala Ala Ala Thr Arg Leu Lys Gly Ile Val Pro Leu

15 65 70 75 80

Ala Lys Val Asp Cys Thr Ala Asn Thr Asn Thr Cys Asn Lys Tyr Gly

85 90 95

Val Ser Gly Tyr Pro Thr Leu Lys Ile Phe Arg Asp Gly Glu Glu Ala

100 105 110

20 Gly Ala Tyr Asp Gly Pro Arg Thr Ala Asp Gly Ile Val Ser His Leu

115 120 125

Lys Lys Gln Ala Gly Pro Ala Ser Val Pro Leu Arg Thr Glu Glu Glu

130 135 140

Phe Lys Lys Phe Ile Ser Asp Lys Asp Ala Ser Ile Val Gly Phe Phe

145	150	155	160
Asp Asp Ser Phe Ser Glu Ala His Ser Glu Phe Leu Lys Ala Ala Ser			
	165	170	175
Asn Leu Arg Asp Asn Tyr Arg Phe Ala His Thr Asn Val Glu Ser Leu			
5	180	185	190
Val Asn Glu Tyr Asp Asp Asn Gly Glu Gly Ile Ile Leu Phe Arg Pro			
	195	200	205
Ser His Leu Thr Asn Lys Phe Glu Asp Lys Thr Val Ala Tyr Thr Glu			
	210	215	220
10	Gln Lys Met Thr Ser Gly Lys Ile Lys Lys Phe Ile Gln Glu Asn Ile		
	225	230	235
	Phe Gly Ile Cys Pro His Met Thr Glu Asp Asn Lys Asp Leu Ile Gln		
	245	250	255
Gly Lys Asp Leu Leu Ile Ala Tyr Tyr Asp Val Asp Tyr Glu Lys Asn			
15	260	265	270
Ala Lys Gly Ser Asn Tyr Trp Arg Asn Arg Val Met Met Val Ala Lys			
	275	280	285
Lys Phe Leu Asp Ala Gly His Lys Leu Asn Phe Ala Val Ala Ser Arg			
	290	295	300
20	Lys Thr Phe Ser His Glu Leu Ser Asp Phe Gly Leu Glu Ser Thr Ala		
	305	310	315
	Gly Glu Ile Pro Val Val Ala Ile Arg Thr Ala Lys Gly Glu Lys Phe		
	325	330	335
Val Met Gln Glu Glu Phe Ser Arg Asp Gly Lys Ala Leu Glu Arg Phe			

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	340		345		350
	Leu Gln Asp Tyr Phe Asp Gly Asn Leu Lys Arg Tyr Leu Lys Ser Glu				
	355		360		365
	Pro Ile Pro Glu Ser Asn Asp Gly Pro Val Lys Val Val Val Ala Glu				
5	370		375		380
	Asn Phe Asp Glu Ile Val Asn Asn Glu Asn Lys Asp Val Leu Ile Glu				
	385		390		395
	Phe Tyr Ala Pro Trp Cys Gly His Cys Lys Asn Leu Glu Pro Lys Tyr				
		405		410	
					415
10	Lys Glu Leu Gly Glu Lys Leu Ser Lys Asp Pro Asn Ile Val Ile Ala				
		420		425	
					430
	Lys Met Asp Ala Thr Ala Asn Asp Val Pro Ser Pro Tyr Glu Val Arg				
		435		440	
					445
	Gly Phe Pro Thr Ile Tyr Phe Ser Pro Ala Asn Lys Lys Leu Asn Pro				
15	450		455		460
	Lys Lys Tyr Glu Gly Gly Arg Glu Leu Ser Asp Phe Ile Ser Tyr Leu				
	465		470		475
					480
	Gln Arg Glu Ala Thr Asn Pro Pro Val Ile Gln Glu Glu Lys Pro Lys				
		485		490	
					495
20	Lys Lys Lys Lys Ala Gln Glu Asp Leu				
		500		505	

<211> 374

<212> PRT

<213> Homo sapiens

<220>

5 <221> Alcohol dehydrogenase beta chain

<222> (1)..(374)

<223> Accession No. as of 29 August 2003: P00325

<400> 83

10 Ser Thr Ala Gly Lys Val Ile Lys Cys Lys Ala Ala Val Leu Trp Glu

1 5 10 15

Val Lys Lys Pro Phe Ser Ile Glu Asp Val Glu Val Ala Pro Pro Lys

20 25 30

Ala Tyr Glu Val Arg Ile Lys Met Val Ala Val Gly Ile Cys Arg Thr

15 35 40 45

Asp Asp His Val Val Ser Gly Asn Leu Val Thr Pro Leu Pro Val Ile

50 55 60

Leu Gly His Glu Ala Ala Gly Ile Val Glu Ser Val Gly Glu Gly Val

65 70 75 80

20 Thr Thr Val Lys Pro Gly Asp Lys Val Ile Pro Leu Phe Thr Pro Gln

85 90 95

Cys Gly Lys Cys Arg Val Cys Lys Asn Pro Glu Ser Asn Tyr Cys Leu

100 105 110

Lys Asn Asp Leu Gly Asn Pro Arg Gly Thr Leu Gln Asp Gly Thr Arg

	115		120		125
	Arg Phe Thr Cys Arg Gly Lys Pro Ile His His Phe Leu Gly Thr Ser				
	130		135		140
	Thr Phe Ser Gln Tyr Thr Val Val Asp Glu Asn Ala Val Ala Lys Ile				
5	145		150		155
	Asp Ala Ala Ser Pro Leu Glu Lys Val Cys Leu Ile Gly Cys Gly Phe				160
		165		170	
	Ser Thr Gly Tyr Gly Ser Ala Val Asn Val Ala Lys Val Thr Pro Gly				175
		180		185	
					190
10	Ser Thr Cys Ala Val Phe Gly Leu Gly Gly Val Gly Leu Ser Ala Val				
		195		200	
					205
	Met Gly Cys Lys Ala Ala Gly Ala Ala Arg Ile Ile Ala Val Asp Ile				
		210		215	
					220
	Asn Lys Asp Lys Phe Ala Lys Ala Lys Glu Leu Gly Ala Thr Glu Cys				
15	225		230		235
					240
	Ile Asn Pro Gln Asp Tyr Lys Lys Pro Ile Gln Glu Val Leu Lys Glu				
		245		250	
					255
	Met Thr Asp Gly Gly Val Asp Phe Ser Phe Glu Val Ile Gly Arg Leu				
		260		265	
					270
20	Asp Thr Met Met Ala Ser Leu Leu Cys Cys His Glu Ala Cys Gly Thr				
		275		280	
					285
	Ser Val Ile Val Gly Val Pro Pro Ala Ser Gln Asn Leu Ser Ile Asn				
		290		295	
					300
	Pro Met Leu Leu Leu Thr Gly Arg Thr Trp Lys Gly Ala Val Tyr Gly				

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305 310 315 320

Gly Phe Lys Ser Lys Glu Gly Ile Pro Lys Leu Val Ala Asp Phe Met

325 330 335

Ala Lys Lys Phe Ser Leu Asp Ala Leu Ile Thr His Val Leu Pro Phe

5 340 345 350

Glu Lys Ile Asn Glu Gly Phe Asp Leu Leu His Ser Gly Lys Ser Ile

355 360 365

Arg Thr Val Leu Thr Phe

370

10

<210> 84

<211> 241

<212> PRT

15 <213> Homo sapiens

<220>

<221> Glutathione transferase omega 1

<222> (1)..(241)

<223> Accession No. as of 29 August 2003: P78417

20 <400> 84

Met Ser Gly Glu Ser Ala Arg Ser Leu Gly Lys Gly Ser Ala Pro Pro

1 5 10 15

Gly Pro Val Pro Glu Gly Ser Ile Arg Ile Tyr Ser Met Arg Phe Cys



	20		25		30											
	Pro	Phe	Ala	Glu	Arg	Thr	Arg	Leu	Val	Leu	Lys	Ala	Lys	Gly	Ile	Arg
	35							40						45		
	His	Glu	Val	Ile	Asn	Ile	Asn	Leu	Lys	Asn	Lys	Pro	Glu	Trp	Phe	Phe
5	50							55						60		
	Lys	Lys	Asn	Pro	Phe	Gly	Leu	Val	Pro	Val	Leu	Glu	Asn	Ser	Gln	Gly
	65					70					75				80	
	Gln	Leu	Ile	Tyr	Glu	Ser	Ala	Ile	Thr	Cys	Glu	Tyr	Leu	Asp	Glu	Ala
						85				90					95	
10	Tyr	Pro	Gly	Lys	Lys	Leu	Leu	Pro	Asp	Asp	Pro	Tyr	Glu	Lys	Ala	Cys
						100				105					110	
	Gln	Lys	Met	Ile	Leu	Glu	Leu	Phe	Ser	Lys	Val	Pro	Ser	Leu	Val	Gly
						115				120					125	
	Ser	Phe	Ile	Arg	Ser	Gln	Asn	Lys	Glu	Asp	Tyr	Ala	Gly	Leu	Lys	Glu
15	130							135						140		
	Glu	Phe	Arg	Lys	Glu	Phe	Thr	Lys	Leu	Glu	Glu	Val	Leu	Thr	Asn	Lys
	145							150				155			160	
	Lys	Thr	Thr	Phe	Phe	Gly	Gly	Asn	Ser	Ile	Ser	Met	Ile	Asp	Tyr	Leu
						165				170					175	
20	Ile	Trp	Pro	Trp	Phe	Glu	Arg	Leu	Glu	Ala	Met	Lys	Leu	Asn	Glu	Cys
						180				185					190	
	Val	Asp	His	Thr	Pro	Lys	Leu	Lys	Leu	Trp	Met	Ala	Ala	Met	Lys	Glu
						195				200					205	
	Asp	Pro	Thr	Val	Ser	Ala	Leu	Leu	Thr	Ser	Glu	Lys	Asp	Trp	Gln	Gly

210 215 220  
Phe Leu Glu Leu Tyr Leu Gln Asn Ser Pro Glu Ala Cys Asp Tyr Gly  
225 230 235 240  
Leu  
5  
<210> 85  
<211> 999  
10 <212> PRT  
<213> Homo sapiens  
<220>  
<221> 150 kDa oxygen-regulated protein precursor (Orp150)  
<222> (1)..(999)  
15 <223> Accession No. as of 29 August 2003: Q9Y4L1  
<400> 85  
  
Met Ala Asp Lys Val Arg Arg Gln Arg Pro Arg Arg Arg Val Cys Trp  
1 5 10 15  
20 Ala Leu Val Ala Val Leu Leu Ala Asp Leu Leu Ala Leu Ser Asp Thr  
20 25 30  
Leu Ala Val Met Ser Val Asp Leu Gly Ser Glu Ser Met Lys Val Ala  
35 40 45  
Ile Val Lys Pro Gly Val Pro Met Glu Ile Val Leu Asn Lys Glu Ser

	50		55		60											
	Arg	Arg	Lys	Thr	Pro	Val	Ile	Val	Thr	Leu	Lys	Glu	Asn	Glu	Arg	Phe
	65				70					75						80
	Phe	Gly	Asp	Ser	Ala	Ala	Ser	Met	Ala	Ile	Lys	Asn	Pro	Lys	Ala	Thr
5				85					90						95	
	Leu	Arg	Tyr	Phe	Gln	His	Leu	Leu	Gly	Lys	Gln	Ala	Asp	Asn	Pro	His
				100					105					110		
	Val	Ala	Leu	Tyr	Gln	Ala	Arg	Phe	Pro	Glu	His	Glu	Leu	Thr	Phe	Asp
				115					120					125		
10	Pro	Gln	Arg	Gln	Thr	Val	His	Phe	Gln	Ile	Ser	Ser	Gln	Leu	Gln	Phe
				130					135					140		
	Ser	Pro	Glu	Glu	Val	Leu	Gly	Met	Val	Leu	Asn	Tyr	Ser	Arg	Ser	Leu
	145				150					155					160	
	Ala	Glu	Asp	Phe	Ala	Glu	Gln	Pro	Ile	Lys	Asp	Ala	Val	Ile	Thr	Val
15				165					170					175		
	Pro	Val	Phe	Phe	Asn	Gln	Ala	Glu	Arg	Arg	Ala	Val	Leu	Gln	Ala	Ala
				180					185					190		
	Arg	Met	Ala	Gly	Leu	Lys	Val	Leu	Gln	Leu	Ile	Asn	Asp	Asn	Thr	Ala
				195					200					205		
20	Thr	Ala	Leu	Ser	Tyr	Gly	Val	Phe	Arg	Arg	Lys	Asp	Ile	Asn	Thr	Thr
				210					215					220		
	Ala	Gln	Asn	Ile	Met	Phe	Tyr	Asp	Met	Gly	Ser	Gly	Ser	Thr	Val	Cys
	225				230					235					240	
	Thr	Ile	Val	Thr	Tyr	Gln	Met	Val	Lys	Thr	Lys	Glu	Ala	Gly	Met	Gln

	245	250	255
	Pro Gln Leu Gln Ile Arg Gly Val Gly Phe Asp Arg Thr Leu Gly Gly		
	260	265	270
	Leu Glu Met Glu Leu Arg Leu Arg Glu Arg Leu Ala Gly Leu Phe Asn		
5	275	280	285
	Glu Gln Arg Lys Gly Gln Arg Ala Lys Asp Val Arg Glu Asn Pro Arg		
	290	295	300
	Ala Met Ala Lys Leu Leu Arg Glu Ala Asn Arg Leu Lys Thr Val Leu		
	305	310	315 320
10	Ser Ala Asn Ala Asp His Met Ala Gln Ile Glu Gly Leu Met Asp Asp		
	325	330	335
	Val Asp Phe Lys Ala Lys Val Thr Arg Val Glu Phe Glu Glu Leu Cys		
	340	345	350
	Ala Asp Leu Phe Glu Arg Val Pro Gly Pro Val Gln Gln Ala Leu Gln		
15	355	360	365
	Ser Ala Glu Met Ser Leu Asp Glu Ile Glu Gln Val Ile Leu Val Gly		
	370	375	380
	Gly Ala Thr Arg Val Pro Arg Val Gln Glu Val Leu Leu Lys Ala Val		
	385	390	395 400
20	Gly Lys Glu Glu Leu Gly Lys Asn Ile Asn Ala Asp Glu Ala Ala Ala		
	405	410	415
	Met Gly Ala Val Tyr Gln Ala Ala Ala Leu Ser Lys Ala Phe Lys Val		
	420	425	430
	Lys Pro Phe Val Val Arg Asp Ala Val Val Tyr Pro Ile Leu Val Glu		



625	630	635	640
Pro Lys Gly Asp Ala Thr Pro Glu Gly Glu Lys Ala Thr Glu Lys Glu			
	645	650	655
Asn Gly Asp Lys Ser Glu Ala Gln Lys Pro Ser Glu Lys Ala Glu Ala			
5	660	665	670
Gly Pro Glu Gly Val Ala Pro Ala Pro Glu Gly Glu Lys Lys Gln Lys			
	675	680	685
Pro Ala Arg Lys Arg Arg Met Val Glu Glu Ile Gly Val Glu Leu Val			
	690	695	700
10	Val Leu Asp Leu Pro Asp Leu Pro Glu Asp Lys Leu Ala Gln Ser Val		
	705	710	715
			720
Gln Lys Leu Gln Asp Leu Thr Leu Arg Asp Leu Glu Lys Gln Glu Arg			
	725	730	735
Glu Lys Ala Ala Asn Ser Leu Glu Ala Phe Ile Phe Glu Thr Gln Asp			
15	740	745	750
Lys Leu Tyr Gln Pro Glu Tyr Gln Glu Val Ser Thr Glu Glu Gln Arg			
	755	760	765
Glu Glu Ile Ser Gly Lys Leu Ser Ala Ala Ser Thr Trp Leu Glu Asp			
	770	775	780
20	Glu Gly Val Gly Ala Thr Thr Val Met Leu Lys Glu Lys Leu Ala Glu		
	785	790	795
			800
Leu Arg Lys Leu Cys Gln Gly Leu Phe Phe Arg Val Glu Glu Arg Lys			
	805	810	815
Lys Trp Pro Glu Arg Leu Ser Ala Leu Asp Asn Leu Leu Asn His Ser			

	820	825	830	
	Ser Met Phe Leu Lys Gly Ala Arg Leu Ile Pro Glu Met Asp Gln Ile			
	835	840	845	
	Phe Thr Glu Val Glu Met Thr Thr Leu Glu Lys Val Ile Asn Glu Thr			
5	850	855	860	
	Trp Ala Trp Lys Asn Ala Thr Leu Ala Glu Gln Ala Lys Leu Pro Ala			
	865	870	875	880
	Thr Glu Lys Pro Val Leu Leu Ser Lys Asp Ile Glu Ala Lys Met Met			
	885	890	895	
10	Ala Leu Asp Arg Glu Val Gln Tyr Leu Leu Asn Lys Ala Lys Phe Thr			
	900	905	910	
	Lys Pro Arg Pro Arg Pro Lys Asp Lys Asn Gly Thr Arg Ala Glu Pro			
	915	920	925	
	Pro Leu Asn Ala Ser Ala Ser Asp Gln Gly Glu Lys Val Ile Pro Pro			
15	930	935	940	
	Ala Gly Gln Thr Glu Asp Ala Glu Pro Ile Ser Glu Pro Glu Lys Val			
	945	950	955	960
	Glu Thr Gly Ser Glu Pro Gly Asp Thr Glu Pro Leu Glu Leu Gly Gly			
	965	970	975	
20	Pro Gly Ala Glu Pro Glu Gln Lys Glu Gln Ser Thr Gly Gln Lys Arg			
	980	985	990	
	Pro Leu Lys Asn Asp Glu Leu			
	995			

<210> 86

<211> 271

<212> PRT

5 <213> Homo sapiens

<220>

<221> Peroxiredoxin 4

<222> (1) .. (271)

<223> Accession No. as of 29 August 2003: Q13162

10 <400> 86

Met Glu Ala Leu Pro Leu Leu Ala Ala Thr Thr Pro Asp His Gly Arg

1 5 10 15

His Arg Arg Leu Leu Leu Leu Pro Leu Leu Leu Phe Leu Leu Pro Ala

15 20 25 30

Gly Ala Val Gln Gly Trp Glu Thr Glu Glu Arg Pro Arg Thr Arg Glu

35 40 45

Glu Glu Cys His Phe Tyr Ala Gly Gly Gln Val Tyr Pro Gly Glu Ala

50 55 60

20 Ser Arg Val Ser Val Ala Asp His Ser Leu His Leu Ser Lys Ala Lys

65 70 75 80

Ile Ser Lys Pro Ala Pro Tyr Trp Glu Gly Thr Ala Val Ile Asp Gly

85 90 95

Glu Phe Lys Glu Leu Lys Leu Thr Asp Tyr Arg Gly Lys Tyr Leu Val



- 299 -

	100	105	110	
	Phe Phe Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile			
	115	120	125	
	Ile Ala Phe Gly Asp Arg Leu Glu Glu Phe Arg Ser Ile Asn Thr Glu			
5	130	135	140	
	Val Val Ala Cys Ser Val Asp Ser Gln Phe Thr His Leu Ala Trp Ile			
	145	150	155	160
	Asn Thr Pro Arg Arg Gln Gly Gly Leu Gly Pro Ile Arg Ile Pro Leu			
	165	170	175	
10	Leu Ser Asp Leu Thr His Gln Ile Ser Lys Asp Tyr Gly Val Tyr Leu			
	180	185	190	
	Glu Asp Ser Gly His Thr Leu Arg Gly Leu Phe Ile Ile Asp Asp Lys			
	195	200	205	
	Gly Ile Leu Arg Gln Ile Thr Leu Asn Asp Leu Pro Val Gly Arg Ser			
15	210	215	220	
	Val Asp Glu Thr Leu Arg Leu Val Gln Ala Phe Gln Tyr Thr Asp Lys			
	225	230	235	240
	His Gly Glu Val Cys Pro Ala Gly Trp Lys Pro Gly Ser Glu Thr Ile			
	245	250	255	
20	Ile Pro Asp Pro Ala Gly Lys Leu Lys Tyr Phe Asp Lys Leu Asn			
	260	265	270	

<211> 288

<212> PRT

<213> Homo sapiens

<220>

5 <221> MAWD binding protein

<222> (1)..(288)

<223> Accession No. as of 29 August 2003: P30039

<400> 87

10 Met Lys Leu Pro Ile Phe Ile Ala Asp Ala Phe Thr Ala Arg Ala Phe  
1 5 10 15  
Arg Gly Asn Pro Ala Ala Val Cys Leu Leu Glu Asn Glu Leu Asp Glu  
20 25 30  
Asp Met His Gln Lys Ile Ala Arg Glu Met Asn Leu Ser Glu Thr Ala  
15 35 40 45  
Phe Ile Arg Lys Leu His Pro Thr Asp Asn Phe Ala Gln Ser Ser Cys  
50 55 60  
Phe Gly Leu Arg Trp Phe Thr Pro Ala Ser Glu Val Pro Leu Cys Gly  
65 70 75 80  
20 His Ala Thr Leu Ala Ser Ala Ala Val Leu Phe His Lys Ile Lys Asn  
85 90 95  
Met Asn Ser Thr Leu Thr Phe Val Thr Leu Ser Gly Glu Leu Arg Ala  
100 105 110  
Arg Arg Ala Glu Asp Gly Ile Val Leu Asp Leu Pro Leu Tyr Pro Ala

	115		120		125
	His Pro Gln Asp Phe His Glu Val Glu Asp Leu Ile Lys Thr Ala Ile				
	130		135		140
	Gly Asn Thr Leu Val Gln Asp Ile Cys Tyr Ser Pro Asp Thr Gln Lys				
5	145		150		155
	Leu Leu Val Arg Leu Ser Asp Val Tyr Asn Arg Ser Phe Leu Glu Asn				
		165		170	175
	Leu Lys Val Asn Thr Glu Asn Leu Leu Gln Val Glu Asn Thr Gly Lys				
		180		185	190
10	Val Lys Gly Leu Ile Leu Thr Leu Lys Gly Glu Pro Gly Gly Gln Thr				
	195		200		205
	Gln Ala Phe Asp Phe Tyr Ser Arg Tyr Phe Ala Pro Trp Val Gly Val				
	210		215		220
	Ala Glu Asp Pro Val Thr Gly Ser Ala His Ala Val Leu Ser Ser Tyr				
15	225		230		235
	Trp Ser Gln His Leu Gly Lys Lys Glu Met His Ala Phe Gln Cys Ser				
		245		250	255
	His Arg Gly Gly Glu Leu Gly Ile Ser Leu Arg Pro Asp Gly Arg Val				
		260		265	270
20	Asp Ile Arg Gly Gly Ala Ala Val Val Leu Glu Gly Thr Leu Thr Ala				
	275		280		285

<211> 511

<212> PRT

<213> Homo sapiens

<220>

5 <221> Alpha-amylase 2B precursor

<222> (1)..(511)

<223> Accession No. as of 29 August 2003: P19961

<400> 88

10 Met Lys Phe Phe Leu Leu Leu Phe Thr Ile Gly Phe Cys Trp Ala Gln

1 5 10 15

Tyr Ser Pro Asn Thr Gln Gln Gly Arg Thr Ser Ile Val His Leu Phe

20 25 30

Glu Trp Arg Trp Val Asp Ile Ala Leu Glu Cys Glu Arg Tyr Leu Ala

15 35 40 45

Pro Lys Gly Phe Gly Gly Val Gln Val Ser Pro Pro Asn Glu Asn Val

50 55 60

Ala Ile His Asn Pro Phe Arg Pro Trp Trp Glu Arg Tyr Gln Pro Val

65 70 75 80

20 Ser Tyr Lys Leu Cys Thr Arg Ser Gly Asn Glu Asp Glu Phe Arg Asn

85 90 95

Met Val Thr Arg Cys Asn Asn Val Gly Val Arg Ile Tyr Val Asp Ala

100 105 110

Val Ile Asn His Met Ser Gly Asn Ala Val Ser Ala Gly Thr Ser Ser

```

115              120              125
Thr Cys Gly Ser Tyr Phe Asn Pro Gly Ser Arg Asp Phe Pro Ala Val
130              135              140
Pro Tyr Ser Gly Trp Asp Phe Asn Asp Gly Lys Cys Lys Thr Gly Ser
5 145              150              155              160
Gly Asp Ile Glu Asn Tyr Asn Asp Ala Thr Gln Val Arg Asp Cys Arg
165              170              175
Leu Val Gly Leu Leu Asp Leu Ala Leu Glu Lys Asp Tyr Val Arg Ser
180              185              190
10 Lys Ile Ala Glu Tyr Met Asn His Leu Ile Asp Ile Gly Val Ala Gly
195              200              205
Phe Arg Leu Asp Ala Ser Lys His Met Trp Pro Gly Asp Ile Lys Ala
210              215              220
Ile Leu Asp Lys Leu His Asn Leu Asn Ser Asn Trp Phe Pro Ala Gly
15 225              230              235              240
Ser Lys Pro Phe Ile Tyr Gln Glu Val Ile Asp Leu Gly Gly Glu Pro
245              250              255
Ile Lys Ser Ser Asp Tyr Phe Gly Asn Gly Arg Val Thr Glu Phe Lys
260              265              270
20 Tyr Gly Ala Lys Leu Gly Thr Val Ile Arg Lys Trp Asn Gly Glu Lys
275              280              285
Met Ser Tyr Leu Lys Asn Trp Gly Glu Gly Trp Gly Phe Met Pro Ser
290              295              300
Asp Arg Ala Leu Val Phe Val Asp Asn His Asp Asn Gln Arg Gly His

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305                      310                      315                      320  
Gly Ala Gly Gly Ala Ser Ile Leu Thr Phe Trp Asp Ala Arg Leu Tyr  
                         325                      330                      335  
Lys Met Ala Val Gly Phe Met Leu Ala His Pro Tyr Gly Phe Thr Arg  
5                      340                      345                      350  
Val Met Ser Ser Tyr Arg Trp Pro Arg Gln Phe Gln Asn Gly Asn Asp  
                         355                      360                      365  
Val Asn Asp Trp Val Gly Pro Pro Asn Asn Asn Gly Val Ile Lys Glu  
                         370                      375                      380  
10 Val Thr Ile Asn Pro Asp Thr Thr Cys Gly Asn Asp Trp Val Cys Glu  
                         385                      390                      395                      400  
His Arg Trp Arg Gln Ile Arg Asn Met Val Asn Phe Arg Asn Val Val  
                         405                      410                      415  
Asp Gly Gln Pro Phe Thr Asn Trp Tyr Asp Asn Gly Ser Asn Gln Val  
15                      420                      425                      430  
Ala Phe Gly Arg Gly Asn Arg Gly Phe Ile Val Phe Asn Asn Asp Asp  
                         435                      440                      445  
Trp Thr Phe Ser Leu Thr Leu Gln Thr Gly Leu Pro Ala Gly Thr Tyr  
                         450                      455                      460  
20 Cys Asp Val Ile Ser Gly Asp Lys Ile Asn Gly Asn Cys Thr Gly Ile  
                         465                      470                      475                      480  
Lys Ile Tyr Val Ser Asp Asp Gly Lys Ala His Phe Ser Ile Ser Asn  
                         485                      490                      495  
Ser Ala Glu Asp Pro Phe Ile Ala Ile His Ala Glu Ser Lys Leu

500

505

510

<210> 89

5 <211> 511

<212> PRT

<213> Homo sapiens

<220>

<221> Alpha-amylase, pancreatic precursor

10 <222> (1)..(511)

<223> Accession No. as of 29 August 2003: P04746

<400> 89

Met Lys Phe Phe Leu Leu Leu Phe Thr Ile Gly Phe Cys Trp Ala Gln

15 1 5 10 15

Tyr Ser Pro Asn Thr Gln Gln Gly Arg Thr Ser Ile Val His Leu Phe

20 25 30

Glu Trp Arg Trp Val Asp Ile Ala Leu Glu Cys Glu Arg Tyr Leu Ala

35 40 45

20 Pro Lys Gly Phe Gly Gly Val Gln Val Ser Pro Pro Asn Glu Asn Val

50 55 60

Ala Ile Tyr Asn Pro Phe Arg Pro Trp Trp Glu Arg Tyr Gln Pro Val

65 70 75 80

Ser Tyr Lys Leu Cys Thr Arg Ser Gly Asn Glu Asp Glu Phe Arg Asn

	85	90	95	
	Met Val Thr Arg Cys Asn Asn Val Gly Val Arg Ile Tyr Val Asp Ala			
	100	105	110	
	Val Ile Asn His Met Cys Gly Asn Ala Val Ser Ala Gly Thr Ser Ser			
5	115	120	125	
	Thr Cys Gly Ser Tyr Phe Asn Pro Gly Ser Arg Asp Phe Pro Ala Val			
	130	135	140	
	Pro Tyr Ser Gly Trp Asp Phe Asn Asp Gly Lys Cys Lys Thr Gly Ser			
	145	150	155	160
10	Gly Asp Ile Glu Asn Tyr Asn Asp Ala Thr Gln Val Arg Asp Cys Arg			
	165	170	175	
	Leu Thr Gly Leu Leu Asp Leu Ala Leu Glu Lys Asp Tyr Val Arg Ser			
	180	185	190	
	Lys Ile Ala Glu Tyr Met Asn His Leu Ile Asp Ile Gly Val Ala Gly			
15	195	200	205	
	Phe Arg Leu Asp Ala Ser Lys His Met Trp Pro Gly Asp Ile Lys Ala			
	210	215	220	
	Ile Leu Asp Lys Leu His Asn Leu Asn Ser Asn Trp Phe Pro Ala Gly			
	225	230	235	240
20	Ser Lys Pro Phe Ile Tyr Gln Glu Val Ile Asp Leu Gly Gly Glu Pro			
	245	250	255	
	Ile Lys Ser Ser Asp Tyr Phe Gly Asn Gly Arg Val Thr Glu Phe Lys			
	260	265	270	
	Tyr Gly Ala Lys Leu Gly Thr Val Ile Arg Lys Trp Asn Gly Glu Lys			



	275		280		285
	Met Ser Tyr Leu Lys Asn Trp Gly Glu Gly Trp Gly Phe Val Pro Ser				
	290		295		300
	Asp Arg Ala Leu Val Phe Val Asp Asn His Asp Asn Gln Arg Gly His				
5	305		310		315
	Gly Ala Gly Gly Ala Ser Ile Leu Thr Phe Trp Asp Ala Arg Leu Tyr				
		325		330	
	Lys Met Ala Val Gly Phe Met Leu Ala His Pro Tyr Gly Phe Thr Arg				
		340		345	
10	Val Met Ser Ser Tyr Arg Trp Pro Arg Gln Phe Gln Asn Gly Asn Asp				
		355		360	
	Val Asn Asp Trp Val Gly Pro Pro Asn Asn Asn Gly Val Ile Lys Glu				
		370		375	
	Val Thr Ile Asn Pro Asp Thr Thr Cys Gly Asn Asp Trp Val Cys Glu				
15	385		390		395
	His Arg Trp Arg Gln Ile Arg Asn Met Val Ile Phe Arg Asn Val Val				
		405		410	
	Asp Gly Gln Pro Phe Thr Asn Trp Tyr Asp Asn Gly Ser Asn Gln Val				
		420		425	
20	Ala Phe Gly Arg Gly Asn Arg Gly Phe Ile Val Phe Asn Asn Asp Asp				
		435		440	
	Trp Ser Phe Ser Leu Thr Leu Gln Thr Gly Leu Pro Ala Gly Thr Tyr				
		450		455	
	Cys Asp Val Ile Ser Gly Asp Lys Ile Asn Gly Asn Cys Thr Gly Ile				

465                      470                      475                      480

Lys Ile Tyr Val Ser Asp Asp Gly Lys Ala His Phe Ser Ile Ser Asn

485                      490                      495

Ser Ala Glu Asp Pro Phe Ile Ala Ile His Ala Glu Ser Lys Leu

5                      500                      505                      510

<210> 90

<211> 553

10 <212> PRT

<213> Homo sapiens

<220>

<221> ATP synthase alpha chain

<222> (1)..(553)

15 <223> Accession No. as of 29 August 2003: P25705

<400> 90

Met Leu Ser Val Arg Val Ala Ala Ala Val Val Arg Ala Leu Pro Arg

1                      5                      10                      15

20 Arg Ala Gly Leu Val Ser Arg Asn Ala Leu Gly Ser Ser Phe Ile Ala

20                      25                      30

Ala Arg Asn Phe His Ala Ser Asn Thr His Leu Gln Lys Thr Gly Thr

35                      40                      45

Ala Glu Met Ser Ser Ile Leu Glu Glu Arg Ile Leu Gly Ala Asp Thr

	50		55		60
	Ser Val Asp Leu Glu Glu Thr Gly Arg Val Leu Ser Ile Gly Asp Gly				
	65		70		75
	Ile Ala Arg Val His Gly Leu Arg Asn Val Gln Ala Glu Glu Met Val				80
5		85		90	95
	Glu Phe Ser Ser Gly Leu Lys Gly Met Ser Leu Asn Leu Glu Pro Asp				
		100		105	110
	Asn Val Gly Val Val Val Phe Gly Asn Asp Lys Leu Ile Lys Glu Gly				
		115		120	125
10	Asp Ile Val Lys Arg Thr Gly Ala Ile Val Asp Val Pro Val Gly Glu				
		130		135	140
	Glu Leu Leu Gly Arg Val Val Asp Ala Leu Gly Asn Ala Ile Asp Gly				
		145		150	155
	Lys Gly Pro Ile Gly Ser Lys Thr Arg Arg Arg Val Gly Leu Lys Ala				
15		165		170	175
	Pro Gly Ile Ile Pro Arg Ile Ser Val Arg Glu Pro Met Gln Thr Gly				
		180		185	190
	Ile Lys Ala Val Asp Ser Leu Val Pro Ile Gly Arg Gly Gln Arg Glu				
		195		200	205
20	Leu Ile Ile Gly Asp Arg Gln Thr Gly Lys Thr Ser Ile Ala Ile Asp				
		210		215	220
	Thr Ile Ile Asn Gln Lys Arg Phe Asn Asp Gly Ser Asp Glu Lys Lys				
		225		230	235
	Lys Leu Tyr Cys Ile Tyr Val Ala Ile Gly Gln Lys Arg Ser Thr Val				240

	245	250	255
	Ala Gln Leu Val Lys Arg Leu Thr Asp Ala Asp Ala Met Lys Tyr Thr		
	260	265	270
	Ile Val Val Ser Ala Thr Ala Ser Asp Ala Ala Pro Leu Gln Tyr Leu		
5	275	280	285
	Ala Pro Tyr Ser Gly Cys Ser Met Gly Glu Tyr Phe Arg Asp Asn Gly		
	290	295	300
	Lys His Ala Leu Ile Ile Tyr Asp Asp Leu Ser Lys Gln Ala Val Ala		
	305	310	315 320
10	Tyr Arg Gln Met Ser Leu Leu Leu Arg Arg Pro Pro Gly Arg Glu Ala		
	325	330	335
	Tyr Pro Gly Asp Val Phe Tyr Leu His Ser Arg Leu Leu Glu Arg Ala		
	340	345	350
	Ala Lys Met Asn Asp Ala Phe Gly Gly Gly Ser Leu Thr Ala Leu Pro		
15	355	360	365
	Val Ile Glu Thr Gln Ala Gly Asp Val Ser Ala Tyr Ile Pro Thr Asn		
	370	375	380
	Val Ile Ser Ile Thr Asp Gly Gln Ile Phe Leu Glu Thr Glu Leu Phe		
	385	390	395 400
20	Tyr Lys Gly Ile Arg Pro Ala Ile Asn Val Gly Leu Ser Val Ser Arg		
	405	410	415
	Val Gly Ser Ala Ala Gln Thr Arg Ala Met Lys Gln Val Ala Gly Thr		
	420	425	430
	Met Lys Leu Glu Leu Ala Gln Tyr Arg Glu Val Ala Ala Phe Ala Gln		

435 440 445  
Phe Gly Ser Asp Leu Asp Ala Ala Thr Gln Gln Leu Leu Ser Arg Gly  
450 455 460  
Val Arg Leu Thr Glu Leu Leu Lys Gln Gly Gln Tyr Ser Pro Met Ala  
5 465 470 475 480  
Ile Glu Glu Gln Val Ala Val Ile Tyr Ala Gly Val Arg Gly Tyr Leu  
485 490 495  
Asp Lys Leu Glu Pro Ser Lys Ile Thr Lys Phe Glu Asn Ala Phe Leu  
500 505 510  
10 Ser His Val Val Ser Gln His Gln Ala Leu Leu Gly Thr Ile Arg Ala  
515 520 525  
Asp Gly Lys Ile Ser Glu Gln Ser Asp Ala Lys Leu Lys Glu Ile Val  
530 535 540  
Thr Asn Phe Leu Ala Gly Phe Glu Ala  
15 545 550

<210> 91

<211> 742

20 <212> PRT

<213> Homo sapiens

<220>

<221> Bile-salt-activated lipase precursor

<222> (1)..(742)

<223> Accession No. as of 29 August 2003: P19835

<400> 91

Met Gly Arg Leu Gln Leu Val Val Leu Gly Leu Thr Cys Cys Trp Ala  
5 1 5 10 15  
Val Ala Ser Ala Ala Lys Leu Gly Ala Val Tyr Thr Glu Gly Gly Phe  
20 25 30  
Val Glu Gly Val Asn Lys Lys Leu Gly Leu Leu Gly Asp Ser Val Asp  
35 40 45  
10 Ile Phe Lys Gly Ile Pro Phe Ala Ala Pro Thr Lys Ala Leu Glu Asn  
50 55 60  
Pro Gln Pro His Pro Gly Trp Gln Gly Thr Leu Lys Ala Lys Asn Phe  
65 70 75 80  
Lys Lys Arg Cys Leu Gln Ala Thr Ile Thr Gln Asp Ser Thr Tyr Gly  
15 85 90 95  
Asp Glu Asp Cys Leu Tyr Leu Asn Ile Trp Val Pro Gln Gly Arg Lys  
100 105 110  
Gln Val Ser Arg Asp Leu Pro Val Met Ile Trp Ile Tyr Gly Gly Ala  
115 120 125  
20 Phe Leu Met Gly Ser Gly His Gly Ala Asn Phe Leu Asn Asn Tyr Leu  
130 135 140  
Tyr Asp Gly Glu Glu Ile Ala Thr Arg Gly Asn Val Ile Val Val Thr  
145 150 155 160  
Phe Asn Tyr Arg Val Gly Pro Leu Gly Phe Leu Ser Thr Gly Asp Ala

	165	170	175
	Asn Leu Pro Gly Asn Tyr Gly Leu Arg Asp Gln His Met Ala Ile Ala		
	180	185	190
	Trp Val Lys Arg Asn Ile Ala Ala Phe Gly Gly Asp Pro Asn Asn Ile		
5	195	200	205
	Thr Leu Phe Gly Glu Ser Ala Gly Gly Ala Ser Val Ser Leu Gln Thr		
	210	215	220
	Leu Ser Pro Tyr Asn Lys Gly Leu Ile Arg Arg Ala Ile Ser Gln Ser		
	225	230	235 240
10	Gly Val Ala Leu Ser Pro Trp Val Ile Gln Lys Asn Pro Leu Phe Trp		
	245	250	255
	Ala Lys Lys Val Ala Glu Lys Val Gly Cys Pro Val Gly Asp Ala Ala		
	260	265	270
	Arg Met Ala Gln Cys Leu Lys Val Thr Asp Pro Arg Ala Leu Thr Leu		
15	275	280	285
	Ala Tyr Lys Val Pro Leu Ala Gly Leu Glu Tyr Pro Met Leu His Tyr		
	290	295	300
	Val Gly Phe Val Pro Val Ile Asp Gly Asp Phe Ile Pro Ala Asp Pro		
	305	310	315 320
20	Ile Asn Leu Tyr Ala Asn Ala Ala Asp Ile Asp Tyr Ile Ala Gly Thr		
	325	330	335
	Asn Asn Met Asp Gly His Ile Phe Ala Ser Ile Asp Met Pro Ala Ile		
	340	345	350
	Asn Lys Gly Asn Lys Lys Val Thr Glu Glu Asp Phe Tyr Lys Leu Val		





545                      550                      555                      560  
Pro Pro Thr Gly Asp Ser Glu Ala Thr Pro Val Pro Pro Thr Gly Asp  
                         565                      570                      575  
Ser Glu Thr Ala Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro  
5                      580                      585                      590  
Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly  
                         595                      600                      605  
Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro  
                         610                      615                      620  
10 Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr  
                         625                      630                      635                      640  
Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Gly Ala  
                         645                      650                      655  
Pro Pro Val Pro Pro Thr Gly Asp Ala Gly Pro Pro Pro Val Pro Pro  
15                      660                      665                      670  
Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Gly  
                         675                      680                      685  
Ala Pro Pro Val Thr Pro Thr Gly Asp Ser Glu Thr Ala Pro Val Pro  
                         690                      695                      700  
20 Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser  
                         705                      710                      715                      720  
Glu Ala Ala Pro Val Pro Pro Thr Asp Asp Ser Lys Glu Ala Gln Met  
                         725                      730                      735  
Pro Ala Val Ile Arg Phe

740

<210> 92

5 <211> 467

<212> PRT

<213> Homo sapiens

<220>

<221> Pancreatic lipase related protein precursor

10 <222> (1)..(467)

<223> Accession No. as of 29 August 2003: P54315

<400> 92

Met Leu Ile Phe Trp Thr Ile Thr Leu Phe Leu Leu Gly Ala Ala Lys

15 1 5 10 15

Gly Lys Glu Val Cys Tyr Glu Asp Leu Gly Cys Phe Ser Asp Thr Glu

20 25 30

Pro Trp Gly Gly Thr Ala Ile Arg Pro Leu Lys Ile Leu Pro Trp Ser

35 40 45

20 Pro Glu Lys Ile Gly Thr Arg Phe Leu Leu Tyr Thr Asn Glu Asn Pro

50 55 60

Asn Asn Phe Gln Ile Leu Leu Leu Ser Asp Pro Ser Thr Ile Glu Ala

65 70 75 80

Ser Asn Phe Gln Met Asp Arg Lys Thr Arg Phe Ile Ile His Gly Phe

	85	90	95
	Ile Asp Lys Gly Asp Glu Ser Trp Val Thr Asp Met Cys Lys Lys Leu		
	100	105	110
	Phe Glu Val Glu Glu Val Asn Cys Ile Cys Val Asp Trp Lys Lys Gly		
5	115	120	125
	Ser Gln Ala Thr Tyr Thr Gln Ala Ala Asn Asn Val Arg Val Val Gly		
	130	135	140
	Ala Gln Val Ala Gln Met Leu Asp Ile Leu Leu Thr Glu Tyr Ser Tyr		
	145	150	155
			160
10	Pro Pro Ser Lys Val His Leu Ile Gly His Ser Leu Gly Ala His Val		
	165	170	175
	Ala Gly Glu Ala Gly Ser Lys Thr Pro Gly Leu Ser Arg Ile Thr Gly		
	180	185	190
	Leu Asp Pro Val Glu Ala Ser Phe Glu Ser Thr Pro Glu Glu Val Arg		
15	195	200	205
	Leu Asp Pro Ser Asp Ala Asp Phe Val Asp Val Ile His Thr Asp Ala		
	210	215	220
	Ala Pro Leu Ile Pro Phe Leu Gly Phe Gly Thr Asn Gln Gln Met Gly		
	225	230	235
			240
20	His Leu Asp Phe Phe Pro Asn Gly Gly Glu Ser Met Pro Gly Cys Lys		
	245	250	255
	Lys Asn Ala Leu Ser Gln Ile Val Asp Leu Asp Gly Ile Trp Ala Gly		
	260	265	270
	Thr Arg Asp Phe Val Ala Cys Asn His Leu Arg Ser Tyr Lys Tyr Tyr		



465

<210> 93

5 <211> 469

<212> PRT

<213> Homo sapiens

<220>

<221> Pancreatic lipase related protein 2 precursor

10 <222> (1)..(469)

<223> Accession No. as of 29 August 2003: P54317

<400> 93

Met Leu Pro Pro Trp Thr Leu Gly Leu Leu Leu Ala Thr Val Arg  
15 1 5 10 15  
Gly Lys Glu Val Cys Tyr Gly Gln Leu Gly Cys Phe Ser Asp Glu Lys  
20 25 30  
Pro Trp Ala Gly Thr Leu Gln Arg Pro Val Lys Leu Leu Pro Trp Ser  
35 40 45  
20 Pro Glu Asp Ile Asp Thr Arg Phe Leu Leu Tyr Thr Asn Glu Asn Pro  
50 55 60  
Asn Asn Phe Gln Leu Ile Thr Gly Thr Glu Pro Asp Thr Ile Glu Ala  
65 70 75 80  
Ser Asn Phe Gln Leu Asp Arg Lys Thr Arg Phe Ile Ile His Gly Phe

	85	90	95
	Leu Asp Lys Ala Glu Asp Ser Trp Pro Ser Asp Met Cys Lys Lys Met		
	100	105	110
	Phe Glu Val Glu Lys Val Asn Cys Ile Cys Val Asp Trp Arg His Gly		
5	115	120	125
	Ser Arg Ala Met Tyr Thr Gln Ala Val Gln Asn Ile Arg Val Val Gly		
	130	135	140
	Ala Glu Thr Ala Phe Leu Ile Gln Ala Leu Ser Thr Gln Leu Gly Tyr		
	145	150	155
			160
10	Ser Leu Glu Asp Val His Val Ile Gly His Ser Leu Gly Ala His Thr		
	165	170	175
	Ala Ala Glu Ala Gly Arg Arg Leu Gly Gly Arg Val Gly Arg Ile Thr		
	180	185	190
	Gly Leu Asp Pro Ala Gly Pro Cys Phe Gln Asp Glu Pro Glu Glu Val		
15	195	200	205
	Arg Leu Asp Pro Ser Asp Ala Val Phe Val Asp Val Ile His Thr Asp		
	210	215	220
	Ser Ser Pro Ile Val Pro Ser Leu Gly Phe Gly Met Ser Gln Lys Val		
	225	230	235
			240
20	Gly His Leu Asp Phe Phe Pro Asn Gly Gly Lys Glu Met Pro Gly Cys		
	245	250	255
	Lys Lys Asn Val Leu Ser Thr Ile Thr Asp Ile Asp Gly Ile Trp Glu		
	260	265	270
	Gly Ile Gly Gly Phe Val Ser Cys Asn His Leu Arg Ser Phe Glu Tyr		

	275		280		285
	Tyr Ser Ser Ser Val Leu Asn Pro Asp Gly Phe Leu Gly Tyr Pro Cys				
	290		295		300
	Ala Ser Tyr Asp Glu Phe Gln Glu Ser Lys Cys Phe Pro Cys Pro Ala				
5	305		310		315
	Glu Gly Cys Pro Lys Met Gly His Tyr Ala Asp Gln Phe Lys Gly Lys				
		325		330	
	Thr Ser Ala Val Glu Gln Thr Phe Phe Leu Asn Thr Gly Glu Ser Gly				
		340		345	
10	Asn Phe Thr Ser Trp Arg Tyr Lys Val Ser Val Thr Leu Ser Gly Lys				
		355		360	
	Glu Lys Val Asn Gly Tyr Ile Arg Ile Ala Leu Tyr Gly Ser Asn Glu				
		370		375	
	Asn Ser Lys Gln Tyr Glu Ile Phe Lys Gly Ser Leu Lys Pro Asp Ala				
15	385		390		395
	Ser His Thr Cys Ala Ile Asp Val Asp Phe Asn Val Gly Lys Ile Gln				
		405		410	
	Lys Val Lys Phe Leu Trp Asn Lys Arg Gly Ile Asn Leu Ser Glu Pro				
		420		425	
20	Lys Leu Gly Ala Ser Gln Ile Thr Val Gln Ser Gly Glu Asp Gly Thr				
		435		440	
	Glu Tyr Asn Phe Cys Ser Ser Asp Thr Val Glu Glu Asn Val Leu Gln				
		450		455	
	Ser Leu Tyr Pro Cys				

465

<210> 94

5 <211> 465

<212> PRT

<213> Homo sapiens

<220>

<221> Triacylglycerol lipase, pancreatic precursor

10 <222> (1)..(465)

<223> Accession No. as of 29 August 2003: P16233

<400> 94

Met Leu Pro Leu Trp Thr Leu Ser Leu Leu Leu Gly Ala Val Ala Gly  
15 1 5 10 15  
Lys Glu Val Cys Tyr Glu Arg Leu Gly Cys Phe Ser Asp Asp Ser Pro  
20 25 30  
Trp Ser Gly Ile Thr Glu Arg Pro Leu His Ile Leu Pro Trp Ser Pro  
35 40 45  
20 Lys Asp Val Asn Thr Arg Phe Leu Leu Tyr Thr Asn Glu Asn Pro Asn  
50 55 60  
Asn Phe Gln Glu Val Ala Ala Asp Ser Ser Ser Ile Ser Gly Ser Asn  
65 70 75 80  
Phe Lys Thr Asn Arg Lys Thr Arg Phe Ile Ile His Gly Phe Ile Asp



	85	90	95	
	Lys Gly Glu Glu Asn Trp Leu Ala Asn Val Cys Lys Asn Leu Phe Lys			
	100	105	110	
	Val Glu Ser Val Asn Cys Ile Cys Val Asp Trp Lys Gly Gly Ser Arg			
5	115	120	125	
	Thr Gly Tyr Thr Gln Ala Ser Gln Asn Ile Arg Ile Val Gly Ala Glu			
	130	135	140	
	Val Ala Tyr Phe Val Glu Phe Leu Gln Ser Ala Phe Gly Tyr Ser Pro			
	145	150	155	160
10	Ser Asn Val His Val Ile Gly His Ser Leu Gly Ala His Ala Ala Gly			
	165	170	175	
	Glu Ala Gly Arg Arg Thr Asn Gly Thr Ile Gly Arg Ile Thr Gly Leu			
	180	185	190	
	Asp Pro Ala Glu Pro Cys Phe Gln Gly Thr Pro Glu Leu Val Arg Leu			
15	195	200	205	
	Asp Pro Ser Asp Ala Lys Phe Val Asp Val Ile His Thr Asp Gly Ala			
	210	215	220	
	Pro Ile Val Pro Asn Leu Gly Phe Gly Met Ser Gln Val Val Gly His			
	225	230	235	240
20	Leu Asp Phe Phe Pro Asn Gly Gly Val Glu Met Pro Gly Cys Lys Lys			
	245	250	255	
	Asn Ile Leu Ser Gln Ile Val Asp Ile Asp Gly Ile Trp Glu Gly Thr			
	260	265	270	
	Arg Asp Phe Ala Ala Cys Asn His Leu Arg Ser Tyr Lys Tyr Tyr Thr			

275 280 285  
Asp Ser Ile Val Asn Pro Asp Gly Phe Ala Gly Phe Pro Cys Ala Ser  
290 295 300  
Tyr Asn Val Phe Thr Ala Asn Lys Cys Phe Pro Cys Pro Ser Gly Gly  
5 305 310 315 320  
Cys Pro Gln Met Gly His Tyr Ala Asp Arg Tyr Pro Gly Lys Thr Asn  
325 330 335  
Asp Val Gly Gln Lys Phe Tyr Leu Asp Thr Gly Asp Ala Ser Asn Phe  
340 345 350  
10 Ala Arg Trp Arg Tyr Lys Val Ser Val Thr Leu Ser Gly Lys Lys Val  
355 360 365  
Thr Gly His Ile Leu Val Ser Leu Phe Gly Asn Lys Gly Asn Ser Lys  
370 375 380  
Gln Tyr Glu Ile Phe Lys Gly Thr Leu Lys Pro Asp Ser Thr His Ser  
15 385 390 395 400  
Asn Glu Phe Asp Ser Asp Val Asp Val Gly Asp Leu Gln Met Val Lys  
405 410 415  
Phe Ile Trp Tyr Asn Asn Val Ile Asn Pro Thr Leu Pro Arg Val Gly  
420 425 430  
20 Ala Ser Lys Ile Ile Val Glu Thr Asn Val Gly Lys Gln Phe Asn Phe  
435 440 445  
Cys Ser Pro Glu Thr Val Arg Glu Glu Val Leu Leu Thr Leu Thr Pro  
450 455 460  
Cys

465

<210> 95

5 <211> 572

<212> PRT

<213> Homo sapiens

<220>

<221> Dihydropyrimidinase related protein-2

10 <222> (1)..(572)

<223> Accession No. as of 29 August 2003: Q16555

<400> 95

Met Ser Tyr Gln Gly Lys Lys Asn Ile Pro Arg Ile Thr Ser Asp Arg  
15 1 5 10 15  
Leu Leu Ile Lys Gly Gly Lys Ile Val Asn Asp Asp Gln Ser Phe Tyr  
20 25 30  
Ala Asp Ile Tyr Met Glu Asp Gly Leu Ile Lys Gln Ile Gly Glu Asn  
35 40 45  
20 Leu Ile Val Pro Gly Gly Val Lys Thr Ile Glu Ala His Ser Arg Met  
50 55 60  
Val Ile Pro Gly Gly Ile Asp Val His Thr Arg Phe Gln Met Pro Asp  
65 70 75 80  
Gln Gly Met Thr Ser Ala Asp Asp Phe Phe Gln Gly Thr Lys Ala Ala

	85	90	95	
	Leu Ala Gly Gly Thr Thr Met Ile Ile Asp His Val Val Pro Glu Pro			
	100	105	110	
	Gly Thr Ser Leu Leu Ala Ala Phe Asp Gln Trp Arg Glu Trp Ala Asp			
5	115	120	125	
	Ser Lys Ser Cys Cys Asp Tyr Ser Leu His Val Asp Ile Ser Glu Trp			
	130	135	140	
	His Lys Gly Ile Gln Glu Glu Met Glu Ala Leu Val Lys Asp His Gly			
	145	150	155	160
10	Val Asn Ser Phe Leu Val Tyr Met Ala Phe Lys Asp Arg Phe Gln Leu			
	165	170	175	
	Thr Asp Cys Gln Ile Tyr Glu Val Leu Ser Val Ile Arg Asp Ile Gly			
	180	185	190	
	Ala Ile Ala Gln Val His Ala Glu Asn Gly Asp Ile Ile Ala Glu Glu			
15	195	200	205	
	Gln Gln Arg Ile Leu Asp Leu Gly Ile Thr Gly Pro Glu Gly His Val			
	210	215	220	
	Leu Ser Arg Pro Glu Glu Val Glu Ala Glu Ala Val Asn Arg Ala Ile			
	225	230	235	240
20	Thr Ile Ala Asn Gln Thr Asn Cys Pro Leu Tyr Ile Thr Lys Val Met			
	245	250	255	
	Ser Lys Ser Ser Ala Glu Val Ile Ala Gln Ala Arg Lys Lys Gly Thr			
	260	265	270	
	Val Val Tyr Gly Glu Pro Ile Thr Ala Ser Leu Gly Thr Asp Gly Ser			

	275		280		285											
	His	Tyr	Trp	Ser	Lys	Asn	Trp	Ala	Lys	Ala	Ala	Ala	Phe	Val	Thr	Ser
	290		295		300											
	Pro	Pro	Leu	Ser	Pro	Asp	Pro	Thr	Thr	Pro	Asp	Phe	Leu	Asn	Ser	Leu
5	305		310		315					320						
	Leu	Ser	Cys	Gly	Asp	Leu	Gln	Val	Thr	Gly	Ser	Ala	His	Cys	Thr	Phe
			325		330					335						
	Asn	Thr	Ala	Gln	Lys	Ala	Val	Gly	Lys	Asp	Asn	Phe	Thr	Leu	Ile	Pro
			340		345					350						
10	Glu	Gly	Thr	Asn	Gly	Thr	Glu	Glu	Arg	Met	Ser	Val	Ile	Trp	Asp	Lys
			355		360					365						
	Ala	Val	Val	Thr	Gly	Lys	Met	Asp	Glu	Asn	Gln	Phe	Val	Ala	Val	Thr
			370		375					380						
	Ser	Thr	Asn	Ala	Ala	Lys	Val	Phe	Asn	Leu	Tyr	Pro	Arg	Lys	Gly	Arg
15	385		390		395					400						
	Ile	Ala	Val	Gly	Ser	Asp	Ala	Asp	Leu	Val	Ile	Trp	Asp	Pro	Asp	Ser
			405		410					415						
	Val	Lys	Thr	Ile	Ser	Ala	Lys	Thr	His	Asn	Ser	Ser	Leu	Glu	Tyr	Asn
			420		425					430						
20	Ile	Phe	Glu	Gly	Met	Glu	Cys	Arg	Gly	Ser	Pro	Leu	Val	Val	Ile	Ser
			435		440					445						
	Gln	Gly	Lys	Ile	Val	Leu	Glu	Asp	Gly	Thr	Leu	His	Val	Thr	Glu	Gly
			450		455					460						
	Ser	Gly	Arg	Tyr	Ile	Pro	Arg	Lys	Pro	Phe	Pro	Asp	Phe	Val	Tyr	Lys

465                      470                      475                      480  
Arg Ile Lys Ala Arg Ser Arg Leu Ala Glu Leu Arg Gly Val Pro Arg  
485                      490                      495  
Gly Leu Tyr Asp Gly Pro Val Cys Glu Val Ser Val Thr Pro Lys Thr  
5                      500                      505                      510  
Val Thr Pro Ala Ser Ser Ala Lys Thr Ser Pro Ala Lys Gln Gln Ala  
515                      520                      525  
Pro Pro Val Arg Asn Leu His Gln Ser Gly Phe Ser Leu Ser Gly Ala  
530                      535                      540  
10 Gln Ile Asp Asp Asn Ile Pro Arg Arg Thr Thr Gln Arg Ile Val Ala  
545                      550                      555                      560  
Pro Pro Gly Gly Arg Ala Asn Ile Thr Ser Leu Gly  
565                      570

15

<210> 96

<211> 500

<212> PRT

<213> Homo sapiens

20 <220>

<221> 4-aminobutyrate aminotransferase, mitochondrial precursor

<222> (1)..(500)

<223> Accession No. as of 29 August 2003: P80404

<400> 96

Met Ala Ser Met Leu Leu Ala Gln Arg Leu Ala Cys Ser Phe Gln His  
1 5 10 15  
Thr Tyr Arg Leu Leu Val Pro Gly Ser Arg His Ile Ser Gln Ala Ala  
5 20 25 30  
Ala Lys Val Asp Val Glu Phe Asp Tyr Asp Gly Pro Leu Met Lys Thr  
35 40 45  
Glu Val Pro Gly Pro Arg Ser Gln Glu Leu Met Lys Gln Leu Asn Ile  
50 55 60  
10 Ile Gln Asn Ala Glu Ala Val His Phe Phe Cys Asn Tyr Glu Glu Ser  
65 70 75 80  
Arg Gly Asn Tyr Leu Val Asp Val Asp Gly Asn Arg Met Leu Asp Leu  
85 90 95  
Tyr Ser Gln Ile Ser Ser Val Pro Ile Gly Tyr Ser Asp Pro Ala Leu  
15 100 105 110  
Val Lys Leu Ile Gln Gln Pro Gln Asn Ala Ser Met Phe Val Asn Arg  
115 120 125  
Pro Ala Leu Glu Ile Leu Pro Pro Glu Asn Phe Val Glu Lys Leu Arg  
130 135 140  
20 Gln Ser Leu Leu Ser Val Ala Pro Lys Gly Met Ser Gln Leu Ile Thr  
145 150 155 160  
Met Ala Cys Gly Ser Cys Ser Asn Glu Asn Ala Leu Lys Thr Ile Phe  
165 170 175  
Met Trp Tyr Arg Ser Lys Glu Arg Gly Gln Arg Gly Phe Ser Lys Glu

	180	185	190	
	Glu Leu Glu Thr Cys Met Ile Asn Gln Ala Pro Trp Cys Pro Asp Tyr			
	195	200	205	
	Ser Ile Leu Ser Phe Met Gly Ser Phe His Gly Arg Thr Met Gly Cys			
5	210	215	220	
	Leu Ala Thr Thr His Ser Lys Ala Ile His Lys Ile Asp Ile Pro Ser			
	225	230	235	240
	Phe Asp Trp Pro Ile Ala Pro Phe Pro Arg Leu Lys Tyr Pro Leu Glu			
	245	250	255	
10	Glu Phe Val Lys Glu Asn Gln Gln Glu Glu Ala Gly Cys Leu Glu Glu			
	260	265	270	
	Val Glu Asp Leu Ile Val Lys Tyr Arg Lys Lys Lys Lys Thr Val Ala			
	275	280	285	
	Gly Ile Ile Val Glu Pro Ile Gln Ser Glu Gly Gly Asp Asn His Ala			
15	290	295	300	
	Ser Asp Asp Phe Phe Arg Lys Leu Arg Asp Ile Ala Arg Lys His Cys			
	305	310	315	320
	Cys Ala Phe Leu Val Asp Glu Val Gln Thr Gly Gly Gly Cys Thr Gly			
	325	330	335	
20	Lys Phe Trp Ala His Glu His Trp Gly Leu Asp Asp Pro Ala Asp Val			
	340	345	350	
	Met Thr Phe Ser Lys Lys Met Met Thr Gly Gly Phe Phe Leu Lys Glu			
	355	360	365	
	Glu Phe Arg Pro Asn Ala Pro Tyr Arg Ile Phe Asn Thr Trp Leu Gly			



370 375 380  
Asp Pro Ser Lys Asn Leu Leu Leu Ala Glu Val Ile Asn Ile Ile Lys  
385 390 395 400  
Arg Glu Asp Leu Leu Asn Asn Ala Ala His Ala Gly Lys Ala Leu Leu  
5 405 410 415  
Thr Gly Leu Leu Asp Leu Gln Ala Arg Tyr Pro Gln Phe Ile Ser Arg  
420 425 430  
Val Arg Gly Arg Gly Thr Phe Cys Ser Phe Asp Thr Pro Asp Asp Ser  
435 440 445  
10 Ile Arg Asn Lys Leu Ile Leu Ile Ala Arg Asn Lys Gly Val Val Leu  
450 455 460  
Gly Gly Cys Gly Asp Lys Ser Ile Arg Phe Arg Pro Thr Leu Val Phe  
465 470 475 480  
Arg Asp His His Ala His Leu Phe Leu Asn Ile Phe Ser Asp Ile Leu  
15 485 490 495  
Ala Asp Phe Lys  
500

20 <210> 97

<211> 423

<212> PRT

<213> Homo sapiens

<220>

<221> Glycine amidiontransferase, mitochondrial precursor

<222> (1)..(423)

<223> Accession No. as of 29 August 2003: P50440

<400> 97

5

Met Leu Arg Val Arg Cys Leu Arg Gly Gly Ser Arg Gly Ala Glu Ala

1 5 10 15

Val His Tyr Ile Gly Ser Arg Leu Gly Arg Thr Leu Thr Gly Trp Val

20 25 30

10 Gln Arg Thr Phe Gln Ser Thr Gln Ala Ala Thr Ala Ser Ser Arg Asn

35 40 45

Ser Cys Ala Ala Asp Asp Lys Ala Thr Glu Pro Leu Pro Lys Asp Cys

50 55 60

Pro Val Ser Ser Tyr Asn Glu Trp Asp Pro Leu Glu Glu Val Ile Val

15 65 70 75 80

Gly Arg Ala Glu Asn Ala Cys Val Pro Pro Phe Thr Ile Glu Val Lys

85 90 95

Ala Asn Thr Tyr Glu Lys Tyr Trp Pro Phe Tyr Gln Lys Gln Gly Gly

100 105 110

20 His Tyr Phe Pro Lys Asp His Leu Lys Lys Ala Val Ala Glu Ile Glu

115 120 125

Glu Met Cys Asn Ile Leu Lys Thr Glu Gly Val Thr Val Arg Arg Pro

130 135 140

Asp Pro Ile Asp Trp Ser Leu Lys Tyr Lys Thr Pro Asp Phe Glu Ser

145	150	155	160
Thr Gly Leu Tyr Ser Ala Met Pro Arg Asp Ile Leu Ile Val Val Gly			
	165	170	175
Asn Glu Ile Ile Glu Ala Pro Met Ala Trp Arg Ser Arg Phe Phe Glu			
5	180	185	190
Tyr Arg Ala Tyr Arg Ser Ile Ile Lys Asp Tyr Phe His Arg Gly Ala			
	195	200	205
Lys Trp Thr Thr Ala Pro Lys Pro Thr Met Ala Asp Glu Leu Tyr Asn			
	210	215	220
10	Gln Asp Tyr Pro Ile His Ser Val Glu Asp Arg His Lys Leu Ala Ala		
	225	230	235 240
Gln Gly Lys Phe Val Thr Thr Glu Phe Glu Pro Cys Phe Asp Ala Ala			
	245	250	255
Asp Phe Ile Arg Ala Gly Arg Asp Ile Phe Ala Gln Arg Ser Gln Val			
15	260	265	270
Thr Asn Tyr Leu Gly Ile Glu Trp Met Arg Arg His Leu Ala Pro Asp			
	275	280	285
Tyr Arg Val His Ile Ile Ser Phe Lys Asp Pro Asn Pro Met His Ile			
	290	295	300
20	Asp Ala Thr Phe Asn Ile Ile Gly Pro Gly Ile Val Leu Ser Asn Pro		
	305	310	315 320
Asp Arg Pro Cys His Gln Ile Asp Leu Phe Lys Lys Ala Gly Trp Thr			
	325	330	335
Ile Ile Thr Pro Pro Thr Pro Ile Ile Pro Asp Asp His Pro Leu Trp			

340 345 350  
Met Ser Ser Lys Trp Leu Ser Met Asn Val Leu Met Leu Asp Glu Lys  
355 360 365  
Arg Val Met Val Asp Ala Asn Glu Val Pro Ile Gln Lys Met Phe Glu  
5 370 375 380  
Lys Leu Gly Ile Thr Thr Ile Lys Val Asn Ile Arg Asn Ala Asn Ser  
385 390 395 400  
Leu Gly Gly Gly Phe His Cys Trp Thr Cys Asp Val Arg Arg Arg Gly  
405 410 415  
10 Thr Leu Gln Ser Tyr Leu Asp  
420

<210> 98  
15 <211> 654  
<212> PRT  
<213> Homo sapiens  
<220>  
<221> GRP 78  
20 <222> (1)..(654)  
<223> Accession No. as of 29 August 2003: P11021  
<220>  
<221> misc\_feature  
<222> (302)..(302)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (329)..(329)

5 <223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (344)..(344)

<223> Xaa can be any naturally occurring amino acid

10 <220>

<221> misc\_feature

<222> (461)..(461)

<223> Xaa can be any naturally occurring amino acid

<400> 98

15

Met Lys Leu Ser Leu Val Ala Ala Met Leu Leu Leu Leu Leu Ser Ala

1 5 10 15

Ala Arg Ala Lys Glu Glu Asp Met Gly Thr Val Val Ala Ile His Leu

20 25 30

20 Gly Thr Thr Tyr Pro Cys Val Gly Val Phe Lys Asn Gly Arg Met Glu

35 40 45

Ile Ile Ala Asn Asp Gln Gly Asn Arg Ile Met Pro Ser Tyr Val Ala

50 55 60

Phe Thr Pro Glu Gly Glu Cys Leu Ile Gly Asp Ala Ala Lys Asn Gln

65		70		75		80
Leu Thr Ser Asn Pro Lys Asn Thr Val Phe Asp Ala Lys Arg Leu Ile						
		85		90		95
Gly Arg Arg Trp His Asp Pro Ser Val Gln Gln Asp Ile Glu Phe Leu						
5		100		105		110
Pro Phe Lys Val Val Glu Lys Asn Thr Lys Ser Tyr Ile Gln Ile Asp						
		115		120		125
Val Gly Gly Gly Gln Thr Lys Thr Phe Ala Pro Lys Glu Ile Ser Ala						
		130		135		140
10	Met Val Leu Thr Lys Met Lys Glu Asn Ala Glu Ala Tyr Leu Gly Lys					
		145		150		155
						160
Val Thr His Ala Val Val Thr Ala Pro Ala Tyr Phe Asn Asp Ala Gln						
		165		170		175
Cys Gln Ala Thr Lys Asp Ala Gly Thr Ile Ala Asp Leu Asn Val Met						
15		180		185		190
Arg Ile Ile Asn Lys Pro Thr Ala Ala Ala Ile Ala Tyr Gly Leu Asp						
		195		200		205
Lys Arg Glu Gly Glu Lys Asn Ile Leu Val Phe Asp Leu Gly Gly Gly						
		210		215		220
20	Thr Phe Asp Val Ser Leu Leu Thr Ile Asp Asn Gly Val Phe Lys Val					
		225		230		235
						240
Val Ala Thr Asn Gly Asp Thr Tyr Leu Gly Gly Glu Asp Phe Asp Gln						
		245		250		255
Arg Val Met Glu His Phe Ile Lys Leu Tyr Lys Lys Lys Thr Gly Lys						

	260		265		270
	Asp Val Arg Lys Asp Asn Arg Ala Val Gln Lys Leu Trp Arg Lys Val				
	275		280		285
	Glu Lys Ala Lys Arg Ala Leu Ser Ser Gln His Gln Ala Xaa Val Ile				
5	290		295		300
	Glu Ile Glu Ser Phe Tyr Glu Gly Glu Asp Phe Ser Glu Thr Leu Thr				
	305		310		315
	Gln Ala Lys Phe Glu Glu Leu Asn Xaa Asp Leu Phe Gln Ser Thr Met				
	325		330		335
10	Lys Pro Ser Gln Arg Ser Val Xaa Lys Val Leu Glu Asp Ser Asp Leu				
	340		345		350
	Lys Lys Ser Asp Ile Asp Glu Thr Val Leu Val Gly Gly Phe Thr Gln				
	355		360		365
	Ile Pro Lys Ile Gln Gln Leu Val Lys Glu Phe Phe Asn Gly Lys Glu				
15	370		375		380
	Leu Ser Arg Gly Ile Ser Pro Tyr Glu Ala Val Ala Tyr Gly Ala Ala				
	385		390		395
	Val Gln Ala Gly Val Leu Ser Gly Asp Gln Asp Thr Gly Asp Leu Val				
	405		410		415
20	Leu Leu Asp Ile Cys Pro Leu Thr Leu Gly Ile Glu Thr Val Gly Gly				
	420		425		430
	Val Met Thr Lys Leu Ile Pro Arg Asn Thr Val Val Pro Thr Lys Lys				
	435		440		445
	Ser Gln Ile Phe Ser Thr Ala Phe Asp Asn Gln Pro Xaa Thr Ile Lys				

	450	455	460	
	Val Tyr Glu Gly Lys Gln Pro Leu Thr Lys Asp Asn His Leu Leu Gly			
	465	470	475	480
	Thr Phe Asp Leu Thr Gly Ile Pro Pro Ala Pro Cys Gly Val Pro Gln			
5		485	490	495
	Ile Glu Val Thr Phe Glu Met Asp Val Ser Asp Ile Leu Gln Val Thr			
	500	505	510	
	Ala Lys Asp Lys Gly Thr Arg Tyr Lys Asn Lys Ile Thr Ile Thr Asn			
	515	520	525	
10	Asp Gln Asn His Leu Thr Pro Glu Asp Ile Glu Arg Met Val Asn Asp			
	530	535	540	
	Ala Glu Lys Phe Ala Glu Glu Asp Lys Lys Leu Lys Glu Cys Thr Asp			
	545	550	555	560
	Thr Arg Asn Glu Leu Glu Ser Tyr Ala Tyr Ser Leu Lys Asn Gln Ile			
15		565	570	575
	Gly Asp Lys Glu Lys Leu Gly Gly Lys Leu Ser Ser Glu Asp Lys Glu			
	580	585	590	
	Thr Met Glu Lys Thr Val Glu Glu Lys Thr Glu Trp Leu Glu Ser His			
	595	600	605	
20	Gln Asp Ala Asp Thr Glu Asp Phe Lys Ala Lys Lys Lys Glu Leu Glu			
	610	615	620	
	Glu Ile Val Gln Pro Ile Ile Ser Lys Leu Tyr Gly Ser Ala Gly Pro			
	625	630	635	640
	Pro Pro Thr Gly Glu Glu Asp Thr Ala Glu Lys Asp Glu Leu			



645

650

<210> 99

5 <211> 325

<212> PRT

<213> Homo sapiens

<220>

<221> Eukaryotic translation initiation factor 3 subunit 2

10 <222> (1)..(325)

<223> Accession No. as of 29 August 2003: Q13347

<400> 99

Met Lys Pro Ile Leu Leu Gln Gly His Glu Arg Ser Ile Thr Gln Ile

15 1 5 10 15

Lys Tyr Asn Arg Glu Gly Asp Leu Leu Phe Thr Val Ala Lys Asp Pro

20 25 30

Ile Val Asn Val Trp Tyr Ser Val Asn Gly Glu Arg Leu Gly Thr Tyr

35 40 45

20 Met Gly His Thr Gly Ala Val Trp Cys Val Asp Ala Asp Trp Asp Thr

50 55 60

Lys His Val Leu Thr Gly Ser Ala Asp Asn Ser Cys Arg Leu Trp Asp

65 70 75 80

Cys Glu Thr Gly Lys Gln Leu Ala Leu Leu Lys Thr Asn Ser Ala Val

	85	90	95	
	Arg Thr Cys Gly Phe Asp Phe Gly Gly Asn Ile Ile Met Phe Ser Thr			
	100	105	110	
	Asp Lys Gln Met Gly Tyr Gln Cys Phe Val Ser Phe Phe Asp Leu Arg			
5	115	120	125	
	Asp Pro Ser Gln Ile Asp Asn Asn Glu Pro Tyr Met Lys Ile Pro Cys			
	130	135	140	
	Asn Asp Ser Lys Ile Thr Ser Ala Val Trp Gly Pro Leu Gly Glu Cys			
	145	150	155	160
10	Ile Ile Ala Gly His Glu Ser Gly Glu Leu Asn Gln Tyr Ser Ala Lys			
	165	170	175	
	Ser Gly Glu Val Leu Val Asn Val Lys Glu His Ser Arg Gln Ile Asn			
	180	185	190	
	Asp Ile Gln Leu Ser Arg Asp Met Thr Met Phe Val Thr Ala Ser Lys			
15	195	200	205	
	Asp Asn Thr Ala Lys Leu Phe Asp Ser Thr Thr Leu Glu His Gln Lys			
	210	215	220	
	Thr Phe Arg Thr Glu Arg Pro Val Asn Ser Ala Ala Leu Ser Pro Asn			
	225	230	235	240
20	Tyr Asp His Val Val Leu Gly Gly Gly Gln Glu Ala Met Asp Val Thr			
	245	250	255	
	Thr Thr Ser Thr Arg Ile Gly Lys Phe Glu Ala Arg Phe Phe His Leu			
	260	265	270	
	Ala Phe Glu Glu Glu Phe Gly Arg Val Lys Gly His Phe Gly Pro Ile			

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275 280 285  
Asn Ser Val Ala Phe His Pro Asp Gly Lys Ser Tyr Ser Ser Gly Gly  
290 295 300  
Glu Asp Gly Tyr Val Arg Ile His Tyr Phe Asp Pro Gln Tyr Phe Glu  
5 305 310 315 320  
Phe Glu Phe Glu Ala  
325

10 <210> 100

<211> 572

<212> PRT

<213> Homo sapiens

<220>

15 <221> Dihydropyrimidinase related protein-2

<222> (1)..(572)

<223> Accession No. as of 29 August 2003: Q16555

<400> 100

20 Met Ser Tyr Gln Gly Lys Lys Asn Ile Pro Arg Ile Thr Ser Asp Arg

1 5 10 15

Leu Leu Ile Lys Gly Gly Lys Ile Val Asn Asp Asp Gln Ser Phe Tyr

20 25 30

Ala Asp Ile Tyr Met Glu Asp Gly Leu Ile Lys Gln Ile Gly Glu Asn



225	230	235	240													
Thr	Ile	Ala	Asn	Gln	Thr	Asn	Cys	Pro	Leu	Tyr	Ile	Thr	Lys	Val	Met	
		245				250							255			
	Ser	Lys	Ser	Ser	Ala	Glu	Val	Ile	Ala	Gln	Ala	Arg	Lys	Lys	Gly	Thr
5		260				265							270			
	Val	Val	Tyr	Gly	Glu	Pro	Ile	Thr	Ala	Ser	Leu	Gly	Thr	Asp	Gly	Ser
		275				280							285			
	His	Tyr	Trp	Ser	Lys	Asn	Trp	Ala	Lys	Ala	Ala	Ala	Phe	Val	Thr	Ser
		290				295							300			
10	Pro	Pro	Leu	Ser	Pro	Asp	Pro	Thr	Thr	Pro	Asp	Phe	Leu	Asn	Ser	Leu
		305				310						315			320	
	Leu	Ser	Cys	Gly	Asp	Leu	Gln	Val	Thr	Gly	Ser	Ala	His	Cys	Thr	Phe
					325							330			335	
	Asn	Thr	Ala	Gln	Lys	Ala	Val	Gly	Lys	Asp	Asn	Phe	Thr	Leu	Ile	Pro
15		340				345							350			
	Glu	Gly	Thr	Asn	Gly	Thr	Glu	Glu	Arg	Met	Ser	Val	Ile	Trp	Asp	Lys
		355				360							365			
	Ala	Val	Val	Thr	Gly	Lys	Met	Asp	Glu	Asn	Gln	Phe	Val	Ala	Val	Thr
		370				375							380			
20	Ser	Thr	Asn	Ala	Ala	Lys	Val	Phe	Asn	Leu	Tyr	Pro	Arg	Lys	Gly	Arg
		385				390						395			400	
	Ile	Ala	Val	Gly	Ser	Asp	Ala	Asp	Leu	Val	Ile	Trp	Asp	Pro	Asp	Ser
					405							410			415	
	Val	Lys	Thr	Ile	Ser	Ala	Lys	Thr	His	Asn	Ser	Ser	Leu	Glu	Tyr	Asn

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	420		425		430											
	Ile	Phe	Glu	Gly	Met	Glu	Cys	Arg	Gly	Ser	Pro	Leu	Val	Val	Ile	Ser
	435					440								445		
	Gln	Gly	Lys	Ile	Val	Leu	Glu	Asp	Gly	Thr	Leu	His	Val	Thr	Glu	Gly
5	450					455								460		
	Ser	Gly	Arg	Tyr	Ile	Pro	Arg	Lys	Pro	Phe	Pro	Asp	Phe	Val	Tyr	Lys
	465					470						475			480	
	Arg	Ile	Lys	Ala	Arg	Ser	Arg	Leu	Ala	Glu	Leu	Arg	Gly	Val	Pro	Arg
				485						490					495	
10	Gly	Leu	Tyr	Asp	Gly	Pro	Val	Cys	Glu	Val	Ser	Val	Thr	Pro	Lys	Thr
				500						505					510	
	Val	Thr	Pro	Ala	Ser	Ser	Ala	Lys	Thr	Ser	Pro	Ala	Lys	Gln	Gln	Ala
				515						520					525	
	Pro	Pro	Val	Arg	Asn	Leu	His	Gln	Ser	Gly	Phe	Ser	Leu	Ser	Gly	Ala
15	530					535								540		
	Gln	Ile	Asp	Asp	Asn	Ile	Pro	Arg	Arg	Thr	Thr	Gln	Arg	Ile	Val	Ala
	545					550						555			560	
	Pro	Pro	Gly	Gly	Arg	Ala	Asn	Ile	Thr	Ser	Leu	Gly				
						565								570		

20

<210> 101

<211> 561

<212> PRT

<213> Homo sapiens

<220>

<221> Phosphoglucomutase (EC 5.4.2.2) (Glucose phosphomutase) (PGM)

<222> (1)..(561)

5 <223> Accession No. as of 29 August 2003: P36871

<400> 101

Val Lys Ile Val Thr Val Lys Thr Gln Ala Tyr Gln Asp Gln Lys Pro  
1 5 10 15  
10 Gly Thr Ser Gly Leu Arg Lys Arg Val Lys Val Phe Gln Ser Ser Ala  
20 25 30  
Asn Tyr Ala Glu Asn Phe Ile Gln Ser Ile Ile Ser Thr Val Glu Pro  
35 40 45  
Ala Gln Arg Gln Glu Ala Thr Leu Val Val Gly Gly Asp Gly Arg Phe  
15 50 55 60  
Tyr Met Lys Glu Ala Ile Gln Leu Ile Ala Arg Ile Ala Ala Ala Asn  
65 70 75 80  
Gly Ile Gly Arg Leu Val Ile Gly Gln Asn Gly Ile Leu Ser Thr Pro  
85 90 95  
20 Ala Val Ser Cys Ile Ile Arg Lys Ile Lys Ala Ile Gly Gly Ile Ile  
100 105 110  
Leu Thr Ala Ser His Asn Pro Gly Gly Pro Asn Gly Asp Phe Gly Ile  
115 120 125  
Lys Phe Asn Ile Ser Asn Gly Gly Pro Ala Pro Glu Ala Ile Thr Asp

130	135	140	
Lys	Ile	Phe	Gln
Ile	Ser	Lys	Thr
Ile	Glu	Glu	Tyr
Ala	Val	Cys	Pro
145	150	155	160
Asp	Leu	Lys	Val
Asp	Leu	Gly	Val
Leu	Gly	Lys	Gln
Gln	Phe	Asp	Leu
5	165	170	175
Glu	Asn	Lys	Phe
Lys	Pro	Phe	Thr
Val	Glu	Ile	Val
Asp	Ser	Val	Glu
180	185	190	
Ala	Tyr	Ala	Thr
Met	Leu	Arg	Ser
Ile	Phe	Asp	Phe
Ser	Ala	Leu	Lys
195	200	205	
10	Glu	Leu	Leu
Ser	Gly	Pro	Asn
Arg	Leu	Lys	Ile
Arg	Ile	Asp	Ala
Met	210	215	220
His	Gly	Val	Val
Gly	Pro	Tyr	Val
Lys	Lys	Ile	Leu
Cys	Glu	Glu	Leu
225	230	235	240
Gly	Ala	Pro	Ala
Asn	Ser	Ala	Val
Asn	Cys	Val	Pro
Leu	Glu	Asp	Phe
15	245	250	255
Gly	Gly	His	His
Pro	Asp	Pro	Asn
Leu	Thr	Tyr	Ala
Ala	Asp	Leu	Val
260	265	270	
Glu	Thr	Met	Lys
Ser	Gly	Glu	His
Asp	Phe	Gly	Ala
Ala	Phe	Asp	Gly
275	280	285	
20	Asp	Gly	Asp
Arg	Asn	Met	Ile
Leu	Gly	Lys	His
Gly	Phe	Phe	Val
Asn	290	295	300
Pro	Ser	Asp	Ser
Val	Ala	Val	Ile
Ala	Ala	Asn	Ile
Phe	Ser	Ile	Pro
305	310	315	320
Tyr	Phe	Gln	Gln
Thr	Gly	Val	Arg
Gly	Phe	Ala	Arg
Ser	Met	Pro	Thr



	325	330	335	
	Ser Gly Ala Leu Asp Arg Val Ala Ser Ala Thr Lys Ile Ala Leu Tyr			
	340	345	350	
	Glu Thr Pro Thr Gly Trp Lys Phe Phe Gly Asn Leu Met Asp Ala Ser			
5	355	360	365	
	Lys Leu Ser Leu Cys Gly Glu Glu Ser Phe Gly Thr Gly Ser Asp His			
	370	375	380	
	Ile Arg Glu Lys Asp Gly Leu Trp Ala Val Leu Ala Trp Leu Ser Ile			
	385	390	395	400
10	Leu Ala Thr Arg Lys Gln Ser Val Glu Asp Ile Leu Lys Asp His Trp			
	405	410	415	
	Gln Lys Tyr Gly Arg Asn Phe Phe Thr Arg Tyr Asp Tyr Glu Glu Val			
	420	425	430	
	Glu Ala Glu Gly Ala Asn Lys Met Met Lys Asp Leu Glu Ala Leu Met			
15	435	440	445	
	Phe Asp Arg Ser Phe Val Gly Lys Gln Phe Ser Ala Asn Asp Lys Val			
	450	455	460	
	Tyr Thr Val Glu Lys Ala Asp Asn Phe Glu Tyr Ser Asp Pro Val Asp			
	465	470	475	480
20	Gly Ser Ile Ser Arg Asn Gln Gly Leu Arg Leu Ile Phe Thr Asp Gly			
	485	490	495	
	Ser Arg Ile Val Phe Arg Leu Ser Gly Thr Gly Ser Ala Gly Ala Thr			
	500	505	510	
	Ile Arg Leu Tyr Ile Asp Ser Tyr Glu Lys Asp Val Ala Lys Ile Asn			

515 520 525  
Gln Asp Pro Gln Val Met Leu Ala Pro Leu Ile Ser Ile Ala Leu Lys  
530 535 540  
Val Ser Gln Leu Gln Glu Arg Thr Gly Arg Thr Ala Pro Thr Val Ile  
5 545 550 555 560  
Thr

10 <210> 102

<211> 263

<212> PRT

<213> Homo sapiens

<220>

15 <221> Proteasome subunit alpha type 1

<222> (1)..(263)

<223> Accession No. as of 29 August 2003: P25786

<400> 102

20 Met Phe Arg Asn Gln Tyr Asp Asn Asp Val Thr Val Trp Ser Pro Gln

1 5 10 15

Gly Arg Ile His Gln Ile Glu Tyr Ala Met Glu Ala Val Lys Gln Gly

20 25 30

Ser Ala Thr Val Gly Leu Lys Ser Lys Thr His Ala Val Leu Val Ala

```

      35              40              45
Leu Lys Arg Ala Gln Ser Glu Leu Ala Ala His Gln Lys Lys Ile Leu
      50              55              60
His Val Asp Asn His Ile Gly Ile Ser Ile Ala Gly Leu Thr Ala Asp
5   65              70              75              80
Ala Arg Leu Leu Cys Asn Phe Met Arg Gln Glu Cys Leu Asp Ser Arg
      85              90              95
Phe Val Phe Asp Arg Pro Leu Pro Val Ser Arg Leu Val Ser Leu Ile
      100             105             110
10  Gly Ser Lys Thr Gln Ile Pro Thr Gln Arg Tyr Gly Arg Arg Pro Tyr
      115             120             125
Gly Val Gly Leu Leu Ile Ala Gly Tyr Asp Asp Met Gly Pro His Ile
      130             135             140
Phe Gln Thr Cys Pro Ser Ala Asn Tyr Phe Asp Cys Arg Ala Met Ser
15  145             150             155             160
Ile Gly Ala Arg Ser Gln Ser Ala Arg Thr Tyr Leu Glu Arg His Met
      165             170             175
Ser Glu Phe Met Glu Cys Asn Leu Asn Glu Leu Val Lys His Gly Leu
      180             185             190
20  Arg Ala Leu Arg Glu Thr Leu Pro Ala Glu Gln Asp Leu Thr Thr Lys
      195             200             205
Asn Val Ser Ile Gly Ile Val Gly Lys Asp Leu Glu Phe Thr Ile Tyr
      210             215             220
Asp Asp Asp Asp Val Ser Pro Phe Leu Glu Gly Leu Glu Glu Arg Pro

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225	230	235	240
Gln Arg Lys Ala Gln Pro Ala Gln Pro Ala Asp Glu Pro Ala Glu Lys			

5 260

<400> 103

Ser Ser Trp Pro Gly Tyr Val Arg Pro Leu Pro Pro Ala Ala Ile Glu

20

<212> PRT

<213> Homo sapiens

<220>

<221> Programmed cell death 6 interacting protein (Hp95)

<222> (1)..(868)

5 <223> Accession No. as of 29 August 2003: Q8WUM4

<400> 104

Met Ala Thr Phe Ile Ser Val Gln Leu Lys Lys Thr Ser Glu Val Asp  
1 5 10 15  
10 Leu Ala Lys Pro Leu Val Lys Phe Ile Gln Gln Thr Tyr Pro Ser Gly  
20 25 30  
Gly Glu Glu Gln Ala Gln Tyr Cys Arg Ala Ala Glu Glu Leu Ser Lys  
35 40 45  
Leu Arg Arg Ala Ala Val Gly Arg Pro Leu Asp Lys His Glu Gly Ala  
15 50 55 60  
Leu Glu Thr Leu Leu Arg Tyr Tyr Asp Gln Ile Cys Ser Ile Glu Pro  
65 70 75 80  
Lys Phe Pro Phe Ser Glu Asn Gln Ile Cys Leu Thr Phe Thr Trp Lys  
85 90 95  
20 Asp Ala Phe Asp Lys Gly Ser Leu Phe Gly Gly Ser Val Lys Leu Ala  
100 105 110  
Leu Ala Ser Leu Gly Tyr Glu Lys Ser Cys Val Leu Phe Asn Cys Ala  
115 120 125  
Ala Leu Ala Ser Gln Ile Ala Ala Glu Gln Asn Leu Asp Asn Asp Glu

20 Ser Arg Tyr Asp Glu Tyr Val Asn Val Lys Asp Phe Ser Asp Lys Ile

	325	330	335	
	Leu Val Lys Ser Thr Pro Val Asn Val Pro Ile Ser Gln Lys Phe Thr			
	340	345	350	
	Asp Leu Phe Glu Lys Met Val Pro Val Ser Val Gln Gln Ser Leu Ala			
5	355	360	365	
	Ala Tyr Asn Gln Arg Lys Ala Asp Leu Val Asn Arg Ser Ile Ala Gln			
	370	375	380	
	Met Arg Glu Ala Thr Thr Leu Ala Asn Gly Val Leu Ala Ser Leu Asn			
	385	390	395	400
10	Leu Pro Ala Ala Ile Glu Asp Val Ser Gly Asp Thr Val Pro Gln Ser			
	405	410	415	
	Ile Leu Thr Lys Ser Arg Ser Val Ile Glu Gln Gly Gly Ile Gln Thr			
	420	425	430	
	Val Asp Gln Leu Ile Lys Glu Leu Pro Glu Leu Leu Gln Arg Asn Arg			
15	435	440	445	
	Glu Ile Leu Asp Glu Ser Leu Arg Leu Leu Asp Glu Glu Glu Ala Thr			
	450	455	460	
	Asp Asn Asp Leu Arg Ala Lys Phe Lys Glu Arg Trp Gln Arg Thr Pro			
	465	470	475	480
20	Ser Asn Glu Leu Tyr Lys Pro Leu Arg Ala Glu Gly Thr Asn Phe Arg			
	485	490	495	
	Thr Val Leu Asp Lys Ala Val Gln Ala Asp Gly Gln Val Lys Glu Cys			
	500	505	510	
	Tyr Gln Ser His Arg Asp Thr Ile Val Leu Leu Cys Lys Pro Glu Pro			



20 Gly Thr Lys Phe Tyr Asn Glu Leu Thr Glu Ile Leu Val Arg Phe Gln

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705	710	715	720
Ser Ile Pro Thr Pro Ala Tyr Gln Ser Ser Pro Ala Gly Gly His Ala			
	725	730	735
Pro Thr Pro Pro Thr Pro Ala Pro Arg Thr Met Pro Pro Thr Lys Pro			
5	740	745	750
Gln Pro Pro Ala Arg Pro Pro Pro Pro Val Leu Pro Ala Asn Arg Ala			
	755	760	765
Pro Ser Ala Thr Ala Pro Ser Pro Val Gly Ala Gly Thr Ala Ala Pro			
	770	775	780
10	Ala Pro Ser Gln Thr Pro Gly Ser Ala Pro Pro Pro Gln Ala Gln Gly		
	785	790	795
	800		
Pro Pro Tyr Pro Thr Tyr Pro Gly Tyr Pro Gly Tyr Cys Gln Met Pro			
	805	810	815
Met Pro Met Gly Tyr Asn Pro Tyr Ala Tyr Gly Gln Tyr Asn Met Pro			
15	820	825	830
Tyr Pro Pro Val Tyr His Gln Ser Pro Gly Gln Ala Pro Tyr Pro Gly			
	835	840	845
Pro Gln Gln Pro Ser Tyr Pro Phe Pro Gln Pro Pro Gln Gln Ser Tyr			
	850	855	860
20	Tyr Pro Gln Gln		
	865		

<211> 280

<212> PRT

<213> Homo sapiens

<220>

5 <221> Similar to four and a half LIM domains 3

<222> (1)..(280)

<223> Accession No. as of 29 August 2003: Q9BVA2

<400> 105

10 Met Ser Glu Ser Phe Asp Cys Ala Lys Cys Asn Glu Ser Leu Tyr Gly

1 5 10 15

Arg Lys Tyr Ile Gln Thr Asp Ser Gly Pro Tyr Cys Val Pro Cys Tyr

20 25 30

Asp Asn Thr Phe Ala Asn Thr Cys Ala Glu Cys Gln Gln Leu Ile Gly

15 35 40 45

His Asp Ser Arg Glu Leu Phe Tyr Glu Asp Arg His Phe His Glu Gly

50 55 60

Cys Phe Arg Cys Cys Arg Cys Gln Arg Ser Leu Ala Asp Glu Pro Phe

65 70 75 80

20 Thr Cys Gln Asp Ser Glu Leu Leu Cys Asn Asp Cys Tyr Cys Ser Ala

85 90 95

Phe Ser Ser Gln Cys Ser Ala Cys Gly Glu Thr Val Met Pro Gly Ser

100 105 110

Arg Lys Leu Glu Tyr Gly Gly Gln Thr Trp His Glu His Cys Phe Leu



<211> 280

<212> PRT

<213> Homo sapiens

<220>

5 <221> Skeletal muscle LIM-protein 2 (SLIM 2)

<222> (1)..(280)

<223> Accession No. as of 29 August 2003: Q13643

<400> 106

10 Met Ser Glu Ser Phe Asp Cys Ala Lys Cys Asn Glu Ser Leu Tyr Gly

1 5 10 15

Arg Lys Tyr Ile Gln Thr Asp Ser Gly Pro Tyr Cys Val Pro Cys Tyr

20 25 30

Asp Asn Thr Phe Ala Asn Thr Cys Ala Glu Cys Gln Gln Leu Ile Gly

15 35 40 45

His Asp Ser Arg Glu Leu Phe Tyr Glu Asp Arg His Phe His Glu Gly

50 55 60

Cys Phe Arg Cys Cys Arg Cys Gln Arg Ser Leu Ala Asp Glu Pro Phe

65 70 75 80

20 Thr Arg Gln Asp Ser Glu Leu Leu Cys Asn Asp Cys Tyr Cys Ser Ala

85 90 95

Phe Ser Ser Gln Cys Ser Ala Cys Gly Glu Thr Val Met Pro Gly Ser

100 105 110

Arg Lys Leu Glu Tyr Gly Gly Gln Thr Trp His Glu His Cys Phe Leu



<211> 133

<212> PRT

<213> Homo sapiens

<220>

5 <221> Cytochrome b5

<222> (1)..(133)

<223> Accession No. as of 29 August 2003: P00167

<400> 107

10 Ala Glu Gln Ser Asp Glu Ala Val Lys Tyr Tyr Thr Leu Glu Glu Ile

1 5 10 15

Gln Lys His Asn His Ser Lys Ser Thr Trp Leu Ile Leu His His Lys

20 25 30

Val Tyr Asp Leu Thr Lys Phe Leu Glu Glu His Pro Gly Gly Glu Glu

15 35 40 45

Val Leu Arg Glu Gln Ala Gly Gly Asp Ala Thr Glu Asn Phe Glu Asp

50 55 60

Val Gly His Ser Thr Asp Ala Arg Glu Met Ser Lys Thr Phe Ile Ile

65 70 75 80

20 Gly Glu Leu His Pro Asp Asp Arg Pro Lys Leu Asn Lys Pro Pro Glu

85 90 95

Thr Leu Ile Thr Thr Ile Asp Ser Ser Ser Ser Trp Trp Thr Asn Trp

100 105 110

Val Ile Pro Ala Ile Ser Ala Val Ala Val Ala Leu Met Tyr Arg Leu

115

120

125

Tyr Met Ala Glu Asp

130

5

<210> 108

<211> 175

<212> PRT

<213> Homo sapiens

10 <220>

<221> Pancreatitis-associated protein 1 precursor

<222> (1)..(175)

<223> Accession No. as of 29 August 2003: Q06141

<400> 108

15

Met Leu Pro Pro Met Ala Leu Pro Ser Val Ser Trp Met Leu Leu Ser

1

5

10

15

Cys Leu Met Leu Leu Ser Gln Val Gln Gly Glu Glu Pro Gln Arg Glu

20

25

30

20 Leu Pro Ser Ala Arg Ile Arg Cys Pro Lys Gly Ser Lys Ala Tyr Gly

35

40

45

Ser His Cys Tyr Ala Leu Phe Leu Ser Pro Lys Ser Trp Thr Asp Ala

50

55

60

Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Asn Leu Val Ser Val Leu



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65	70	75	80
Ser Gly Ala Glu Gly Ser Phe Val Ser Ser Leu Val Lys Ser Ile Gly			
	85	90	95
Asn Ser Tyr Ser Tyr Val Trp Ile Gly Leu His Asp Pro Thr Gln Gly			
5	100	105	110
Thr Glu Pro Asn Gly Glu Gly Trp Glu Trp Ser Ser Ser Asp Val Met			
	115	120	125
Asn Tyr Phe Ala Trp Glu Arg Asn Pro Ser Thr Ile Ser Ser Pro Gly			
	130	135	140
10	His Cys Ala Ser Leu Ser Arg Ser Thr Ala Phe Leu Arg Trp Lys Asp		
	145	150	155
			160
Tyr Asn Cys Asn Val Arg Leu Pro Tyr Val Cys Lys Phe Thr Asp			
	165	170	175

15

<210> 109

<211> 1028

<212> PRT

<213> Homo sapiens

20 <220>

<221> Collagen alpha 1(VI) chain precursor

<222> (1)..(1028)

<223> Accession No. as of 29 August 2003: P12109

<400> 109

Met Arg Ala Ala Arg Ala Leu Leu Pro Leu Leu Leu Gln Ala Cys Trp  
1 5 10 15  
Thr Ala Ala Gln Asp Glu Pro Glu Thr Pro Arg Ala Val Ala Phe Gln  
5 20 25 30  
Asp Cys Pro Val Asp Leu Phe Phe Val Leu Asp Thr Ser Glu Ser Val  
35 40 45  
Ala Leu Arg Leu Lys Pro Tyr Gly Ala Leu Val Asp Lys Val Lys Ser  
50 55 60  
10 Phe Thr Lys Arg Phe Ile Asp Asn Leu Arg Asp Arg Tyr Tyr Arg Cys  
65 70 75 80  
Asp Arg Asn Leu Val Trp Asn Ala Gly Ala Leu His Tyr Ser Asp Glu  
85 90 95  
Val Glu Ile Ile Gln Gly Leu Thr Arg Met Pro Gly Gly Arg Asp Ala  
15 100 105 110  
Leu Lys Ser Ser Val Asp Ala Val Lys Tyr Phe Gly Lys Gly Thr Tyr  
115 120 125  
Thr Asp Cys Ala Ile Lys Lys Gly Leu Glu Gln Leu Leu Val Gly Gly  
130 135 140  
20 Ser His Leu Lys Glu Asn Lys Tyr Leu Ile Val Val Thr Asp Gly His  
145 150 155 160  
Pro Leu Glu Gly Tyr Lys Glu Pro Cys Gly Gly Leu Glu Asp Ala Val  
165 170 175  
Asn Glu Ala Lys His Leu Gly Val Lys Val Phe Ser Val Ala Ile Thr

	180	185	190	
	Pro Asp His Leu Glu Pro Arg Leu Ser Ile Ile Ala Thr Asp His Thr			
	195	200	205	
	Tyr Arg Arg Asn Phe Thr Ala Ala Asp Trp Gly Gln Ser Arg Asp Ala			
5	210	215	220	
	Glu Glu Ala Ile Ser Gln Thr Ile Asp Thr Ile Val Asp Met Ile Lys			
	225	230	235	240
	Asn Asn Val Glu Gln Val Cys Cys Ser Phe Glu Cys Gln Pro Ala Arg			
	245	250	255	
10	Gly Pro Pro Gly Leu Arg Gly Asp Pro Gly Phe Glu Gly Glu Arg Gly			
	260	265	270	
	Lys Pro Gly Leu Pro Gly Glu Lys Gly Glu Ala Gly Asp Pro Gly Arg			
	275	280	285	
	Pro Gly Asp Leu Gly Pro Val Gly Tyr Gln Gly Met Lys Gly Glu Lys			
15	290	295	300	
	Gly Ser Arg Gly Glu Lys Gly Ser Arg Gly Pro Lys Gly Tyr Lys Gly			
	305	310	315	320
	Glu Lys Gly Lys Arg Gly Ile Asp Gly Val Asp Gly Val Lys Gly Glu			
	325	330	335	
20	Met Gly Tyr Pro Gly Leu Pro Gly Cys Lys Gly Ser Pro Gly Phe Asp			
	340	345	350	
	Gly Ile Gln Gly Pro Pro Gly Pro Lys Gly Asp Pro Gly Ala Phe Gly			
	355	360	365	
	Leu Lys Gly Glu Lys Gly Glu Pro Gly Ala Asp Gly Glu Ala Gly Arg			

370 375 380  
Pro Gly Ala Arg Gly Pro Ser Gly Asp Glu Gly Pro Ala Gly Glu Pro  
385 390 395 400  
Gly Pro Pro Gly Glu Lys Gly Glu Ala Gly Asp Glu Gly Asn Pro Gly  
5 405 410 415  
Pro Asp Gly Ala Pro Gly Glu Arg Gly Gly Pro Gly Glu Arg Gly Pro  
420 425 430  
Arg Gly Thr Pro Gly Pro Arg Gly Pro Arg Gly Asp Pro Gly Glu Ala  
435 440 445  
10 Gly Pro Gln Gly Asp Gln Gly Arg Glu Gly Pro Val Gly Val Pro Gly  
450 455 460  
Asp Pro Gly Glu Ala Gly Pro Ile Gly Pro Lys Gly Tyr Arg Gly Asp  
465 470 475 480  
Glu Gly Pro Pro Gly Ser Glu Gly Ala Arg Gly Ala Pro Gly Pro Ala  
15 485 490 495  
Gly Pro Pro Gly Asp Pro Gly Leu Met Gly Glu Arg Gly Glu Asp Gly  
500 505 510  
Pro Ala Gly Asn Gly Thr Glu Gly Phe Pro Gly Phe Pro Gly Tyr Pro  
515 520 525  
20 Gly Asn Arg Gly Ala Pro Gly Ile Asn Gly Thr Lys Gly Tyr Pro Gly  
530 535 540  
Leu Lys Gly Asp Glu Gly Glu Ala Gly Asp Pro Gly Asp Asp Asn Asn  
545 550 555 560  
Asp Ile Ala Pro Arg Gly Val Lys Gly Ala Lys Gly Tyr Arg Gly Pro

	565	570	575
	Glu Gly Pro Gln Gly Pro Pro Gly His Gln Gly Pro Pro Gly Pro Asp		
	580	585	590
	Glu Cys Glu Ile Leu Asp Ile Ile Met Lys Met Cys Ser Cys Cys Glu		
5	595	600	605
	Cys Lys Cys Gly Pro Ile Asp Leu Leu Phe Val Leu Asp Ser Ser Glu		
	610	615	620
	Ser Ile Gly Leu Gln Asn Phe Glu Ile Ala Lys Asp Phe Val Val Lys		
	625	630	635 640
10	Val Ile Asp Arg Leu Ser Arg Asp Glu Leu Val Lys Phe Glu Pro Gly		
	645	650	655
	Gln Ser Tyr Ala Gly Val Val Gln Tyr Ser His Ser Gln Met Gln Glu		
	660	665	670
	His Val Ser Leu Arg Ser Pro Ser Ile Arg Asn Val Gln Glu Leu Lys		
15	675	680	685
	Glu Ala Ile Lys Ser Leu Gln Trp Met Ala Gly Gly Thr Phe Thr Gly		
	690	695	700
	Glu Ala Leu Gln Tyr Thr Arg Asp Gln Leu Leu Pro Pro Ser Pro Asn		
	705	710	715 720
20	Asn Arg Ile Ala Leu Val Ile Thr Asp Gly Arg Ser Asp Thr Gln Arg		
	725	730	735
	Asp Thr Thr Pro Leu Asn Val Leu Cys Ser Pro Gly Ile Gln Val Val		
	740	745	750
	Ser Val Gly Ile Lys Asp Val Phe Asp Phe Ile Pro Gly Ser Asp Gln		



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945                      950                      955                      960  
Glu Ala Gln Arg Ala Gly Ile Glu Ile Phe Val Val Val Val Gly Arg  
                         965                      970                      975  
Gln Val Asn Glu Pro His Ile Arg Val Leu Val Thr Gly Lys Thr Ala  
5                      980                      985                      990  
Glu Tyr Asp Val Pro Tyr Gly Glu Ser His Leu Phe Arg Val Pro Ser  
                         995                      1000                      1005  
Tyr Gln Ala Leu Leu Arg Gly Val Phe His Gln Thr Val Ser Arg  
                         1010                      1015                      1020  
10 Lys Val Ala Leu Gly  
                         1025

<210> 110  
15 <211> 338  
                         <212> PRT  
                         <213> Homo sapiens  
                         <220>  
                         <221> Lumican precursor  
20 <222> (1)..(338)  
                         <223> Accession No. as of 29 August 2003: P51884  
                         <400> 110

Met Ser Leu Ser Ala Phe Thr Leu Phe Leu Ala Leu Ile Gly Gly Thr

1	5	10	15	
Ser Gly Gln Tyr Tyr Asp Tyr Asp Phe Pro Leu Ser Ile Tyr Gly Gln				
	20	25	30	
Ser Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro Glu Ser Tyr Pro				
5	35	40	45	
Ser Ala Met Tyr Cys Asp Glu Leu Lys Leu Lys Ser Val Pro Met Val				
	50	55	60	
Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His				
	65	70	75	80
10	Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile			
	85	90	95	
Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Arg Val Phe				
	100	105	110	
Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn His Asn Asn Leu				
15	115	120	125	
Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Glu Asp Leu Gln Leu				
	130	135	140	
Thr His Asn Lys Ile Thr Lys Leu Gly Ser Phe Glu Gly Leu Val Asn				
	145	150	155	160
20	Leu Thr Phe Ile His Leu Gln His Asn Arg Leu Lys Glu Asp Ala Val			
	165	170	175	
Ser Ala Ala Phe Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser				
	180	185	190	
Phe Asn Gln Ile Ala Arg Leu Pro Ser Gly Leu Pro Val Ser Leu Leu				



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195              200              205
Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr
210              215              220
Phe Lys Arg Phe Asn Ala Leu Gln Tyr Leu Arg Leu Ser His Asn Glu
5 225              230              235              240
Leu Ala Asp Ser Gly Ile Pro Gly Asn Ser Phe Asn Val Ser Ser Leu
245              250              255
Val Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Asn Ile Pro Thr Val
260              265              270
10 Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Gln Leu Glu Lys
275              280              285
Phe Asp Ile Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser
290              295              300
Lys Ile Lys His Leu Arg Leu Asp Gly Asn Arg Ile Ser Glu Thr Ser
15 305              310              315              320
Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Val Thr
325              330              335
Leu Asn

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Claims

1. A marker for diagnosis of pancreatic cancer comprising at least one polypeptide selected from the group consisting of the polypeptides listed in tables 2 and 3.
- 5 2. The marker of claim 1 wherein the group from which at least one polypeptide is selected consists of the polypeptides listed in table 2.
3. A polypeptide selected from the group consisting of the polypeptides listed in tables 2 and 3, for use as a marker or as a component of a marker for diagnosis of pancreatic  
10 cancer and/or the susceptibility to pancreatic cancer.
4. An in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of
  - a) obtaining a biological sample; and
  - 15 b) detecting and/or measuring the increase of a marker of claims 1 or 2.
5. The in vitro method of claim 4, wherein the marker comprises at least two polypeptides.
- 20 6. The in vitro method of claims 4 or 5 wherein said biological sample is derived from the group consisting of serum, plasma, pancreatic juice and cells of pancreatic tissue.
7. An in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of
  - 25 a) obtaining a biological sample; and
  - b) detecting and/or measuring the increase of at least one nucleic acid coding for the marker of claims 1 or 2.

8. The in vitro method of claim 7, wherein said nucleic acid molecule is RNA or DNA.

9. The in vitro method of claim 8, wherein said DNA is a cDNA.

5

10. The in vitro method of any one of claims 7 to 9, wherein the expression levels of at least one of said nucleic acids in an individual suspected to suffer from pancreatic cancer and/or to be susceptible to pancreatic cancer is compared to the expression levels of the same nucleic acids in a healthy individual.

10

11. The in vitro method of any one of claims 4 to 6, wherein the expression level of said marker in an individual suspected to suffer from pancreatic cancer and/or to be susceptible to pancreatic cancer is compared to the expression levels of the same marker in a healthy individual.

15

12. The in vitro method of claim 11, wherein an increase of the expression levels of said marker is indicative of pancreatic cancer or the susceptibility to pancreatic cancer.

20

13. A screening method for identifying and/or obtaining a compound which interacts with a polypeptide listed in tables 2 and/or 3 whose expression is upregulated in pancreatic cancer, comprising the steps of

a) contacting said polypeptide with a compound or a plurality of compounds under conditions which allow interaction of said compound with said polypeptide; and

25

b) detecting the interaction between said compound or plurality of compounds with said polypeptide.

14. A screening method for identifying and/or obtaining a compound which is an inhibitor or an antagonist of a polypeptide listed in tables 2 and/or 3 whose expression is upregulated in pancreatic cancer, comprising the steps of

a) contacting a said polypeptide with a compound identified and/or obtained by the screening method of claim 13 under conditions which allow interaction of said compound with said polypeptide;

b) determining the activity of said polypeptide;

5 c) determining the activity of said polypeptide expressed in the host as defined in (a), which has not been contacted with said compound; and

d) quantitatively relating the activity as determined in (b) and (c), wherein a decreased activity determined in (b) in comparison to (c) is indicative for an inhibitor or antagonist.

10

15. A screening method for identifying and/or obtaining a compound which is an inhibitor of the expression of a polypeptide listed in tables 2 and/or 3 whose expression is upregulated in pancreatic cancer, comprising the steps of

a) contacting a host which expresses said polypeptide with a compound,

15 b) determining the expression level and/or activity of said polypeptide;

c) determining the expression level and/or activity of said polypeptide in the host as defined in (a), which has not been contacted with said compound; and

d) quantitatively relating the expression level of said polypeptide as determined in (b) and (c), wherein a decreased expression level determined in (b) in comparison to (c) is indicative for an inhibitor of the expression of said polypeptide.

20

16. A compound identified and/or obtained by the screening methods of any one of claims 13 to 15.

25 17. A pharmaceutical composition comprising the compound of claim 16.

18. A method for the preparation of the pharmaceutical composition of claim 17 comprising formulating the compound of claim 16 in a pharmaceutically acceptable carrier or diluent.

19. Use of a compound of claim 16 for the preparation of a medicament for the treatment or prevention of pancreatic cancer.
- 5 20. Use of a compound of claim 16 for the preparation of a diagnostic composition for diagnosing pancreatic cancer or a predisposition for pancreatic cancer.
21. The use of claim 19 or 20 wherein said compound comprises an antibody, an antibody-derivative, an antibody fragment, a peptide or an antisense construct.
- 10 22. Antibodies against the proteins listed in tables 2 and/or 3, or antigen-binding fragments thereof, for the use in an in vitro method for the diagnosis of pancreatic cancer.
- 15 23. A kit for the diagnosis of pancreatic cancer comprising one or more of the antibodies, or antigen-binding fragments thereof, of claim 22.
24. A kit for the diagnosis of pancreatic cancer comprising one or more of the nucleic acids coding for the marker of claims 1 or 2.
- 20 25. A kit for screening of compounds that activate or inhibit any of the polypeptides listed in tables 2 and/or 3, or stimulate or inhibit the expression of any of said polypeptides.
- 25 26. A marker for diagnosis of pancreatic cancer comprising at least one polypeptide selected from the group consisting of the polypeptides listed in table 6.

27. The marker of claim 26, wherein said at least one polypeptide does not include Seq ID No.s 25 and 50 to 55.

28. The marker according to any one of claims 26 to 27, additionally comprising at least one of the polypeptides listed in table 5.

29. An in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of

a) obtaining a biological sample; and

b) detecting and/or measuring the increase of at least one of the polypeptides listed in table 6.

30. The in vitro method of claim 29, additionally comprising the step of detecting and/or measuring the decrease of at least one of the polypeptides listed in table 5.

31. The in vitro method of claims 29 or 30, wherein said at least one polypeptide does not include Seq ID No.s 25 and 50 to 55.

32. The in vitro method of any one of claims 29 to 31, wherein said biological sample is derived from the group consisting of serum, plasma, pancreatic juice and cells of pancreatic tissue.

33. An in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of

a) obtaining a biological sample; and

b) detecting and/or measuring the increase of at least one nucleic acid coding for the marker of any one of claims 26 to 28.

34. The in vitro method of claim 33, wherein said nucleic acid molecule is RNA or DNA.

35. The in vitro method of claim 34, wherein said DNA is a cDNA.

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36. The in vitro method of any one of claims 33 to 35, wherein the expression levels of at least one of said nucleic acids in an individual suspected to suffer from pancreatic cancer and/or to be susceptible to pancreatic cancer is compared to the expression levels of the same nucleic acids in a healthy individual.

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37. The in vitro method of any one of claims 33 to 36, wherein the expression level of said marker in an individual suspected to suffer from pancreatic cancer and/or to be susceptible to pancreatic cancer is compared to the expression levels of the same marker in a healthy individual.

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38. The in vitro method of claim 37, wherein an increase of the expression levels of said marker is indicative of pancreatic cancer or the susceptibility to pancreatic cancer.

39. A screening method for identifying and/or obtaining a compound which interacts with a polypeptide selected from the group consisting of the polypeptides listed in table 6 whose expression is upregulated in pancreatic cancer, comprising the steps of

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a) contacting said polypeptide with a compound or a plurality of compounds under conditions which allow interaction of said compound with said polypeptide; and

b) detecting the interaction between said compound or plurality of compounds with said polypeptide.

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40. A screening method for identifying and/or obtaining a compound which is an inhibitor or an antagonist of a polypeptide listed in table 6 whose expression is upregulated in pancreatic cancer, comprising the steps of



a) contacting said polypeptide with a compound identified and/or obtained by the screening method of claim 39 under conditions which allow interaction of said compound with said polypeptide;

b) determining the activity of said polypeptide;

5 c) determining the activity of said polypeptide expressed in the host as defined in (a), which has not been contacted with said compound; and

d) quantitatively relating the activity as determined in (b) and (c), wherein a decreased activity determined in (b) in comparison to (c) is indicative for an inhibitor or antagonist.

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41. A screening method for identifying and/or obtaining a compound which is an inhibitor of the expression of a polypeptide selected from the group consisting of the polypeptides listed in table 6 whose expression is upregulated in pancreatic cancer, comprising the steps of

15 a) contacting a host which expresses said polypeptide with a compound,

b) determining the expression level and/or activity of said polypeptide;

c) determining the expression level and/or activity of said polypeptide in the host as defined in (a), which has not been contacted with said compound; and

20 d) quantitatively relating the expression level of said polypeptide as determined in (b) and (c), wherein a decreased expression level determined in (b) in comparison to (c) is indicative for an inhibitor of the expression of said polypeptide.

42. A compound identified and/or obtained by the screening methods of any one of claims 39 to 41.

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43. A pharmaceutical composition comprising the compound of claim 42.

44. A method for the preparation of the pharmaceutical composition of claim 43 comprising formulating the compound of claim 42 in a pharmaceutically acceptable carrier or diluent.
- 5 45. Use of a compound of claim 42 for the preparation of a medicament for the treatment or prevention of pancreatic cancer.
46. Use of a compound of claim 42 for the preparation of a diagnostic composition for diagnosing pancreatic cancer or a predisposition for pancreatic cancer.
- 10 47. The use of claim 45 or 46 wherein said compound comprises an antibody, an antibody-derivative, an antibody fragment, a peptide or an antisense construct.
48. Antibodies against the proteins listed in tables 5 and/or 6, or antigen-binding  
15 fragments thereof, for the use in an in vitro method for the diagnosis of pancreatic cancer.
49. A kit for the diagnosis of pancreatic cancer comprising one or more of the antibodies, or antigen-binding fragments thereof, of claim 48.
- 20 50. A kit for the diagnosis of pancreatic cancer comprising one or more of the nucleic acids coding for the marker of claims 26 to 28.
51. A kit for screening of compounds that activate or inhibit any of the polypeptides listed in table 5 and/or 6, or stimulate or inhibit the expression of any of said polypeptides.
- 25 52. The kit of claim 51, wherein said polypeptides are the polypeptides listed in table 6.

53. The proteins, compounds, kits, methods and uses substantially as herein before described, especially with reference to the foregoing examples.

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Abstract

- The present invention provides polypeptides which are up- or down-regulated in pancreatic cancer and which can be used as markers for diagnosis of pancreatic cancer.
- 5 The invention also provides an in vitro method for the diagnosis of pancreatic cancer and/or the susceptibility to pancreatic cancer comprising the steps of a) obtaining a biological sample; and b) detecting and/or measuring the increase of one or more polypeptides as disclosed herein. Furthermore, screening methods relating to inhibitors and antagonists of the specific polypeptides disclosed herein are provided.

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